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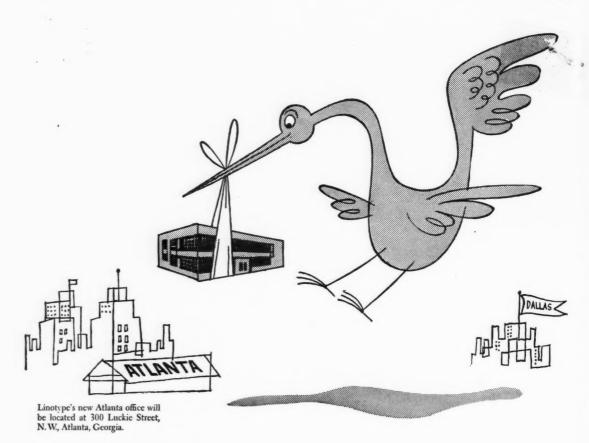
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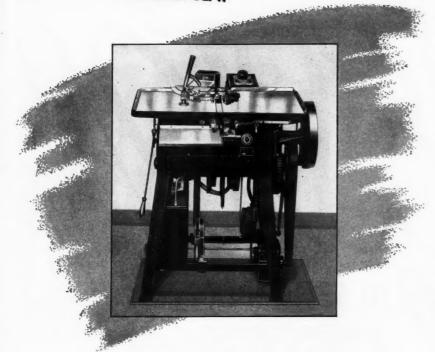
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Model	Sheet		Rollers	Up to
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Press	Maximum	Bed Size	No. of Form	Speed
Model	Sheet		Rollers	Up to
29	22" x 28"	25 1/2" x 29"	2	4500



CUTTERS AND CREASERS

Press Model	Maximum Sheet	Bed Size	Speed Up to
29	22" x 28"	25 ½" x 29"	4500
49	32" x 48 ½"	36%" x 49"	2400
61	38 1/4" x 60 1/2"	44 1/6" x 61"	2200
70	46 1/4" x 69 1/2"	50 ¾ " x 70"	1900



OFFSET PRESSES SINGLE OR MULTICOLOR

Press Model	Maximum Sheet	Plate Size	Design Size	Speed Up to
61	42" x 58"	47 1/8 " x 59"	41 %" x 58"	6500
76	52" x 76"	571/6" x 77"	51 %" x 76"	6000

76

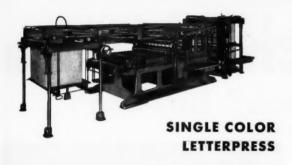
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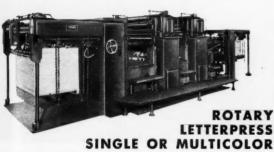
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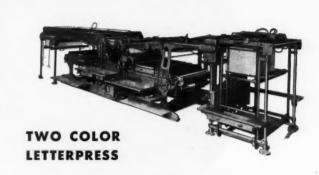


Press Model	Maximum Sheet	Bed Size	No. of Form Rollers	Speed Up to
41	28" x 41"	31 %" x 41 1/2"	4	3000
46	33 1/4" x 45 1/2"	36 % " x 46"	4	2800
56	42" x 56"	44 1/2" x 56 1/2"	4	2250



Press Model	Maximum Sheet	Design Size	No. and Size of Form Rollers	
61	42" x 60"	41 % '' x 59''	2-3 ¾ " Dia. 2-4" Dia.	3000 to 6000
76	52" x 76"	51 % " x 75"	2-3.¾ " Dia. 2-4" Dia.	2750 to 5500

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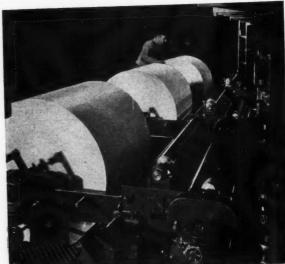
Pro	ess del	Maximum Sheet	Bed Size	No. of Form Rollers	Speed Up to
41	TC	27 1/4" x 41"	29 % "×41 ½"	4	2800
46	TC	32" x 45 1/2"	36 1/8' x 46"	4	2500
56	TC	38" x 56"	42 % " x 56 1/2"	4	2250
6/0	TC	46 1/4" x 69 1/2"	52" x 70"	4	1500



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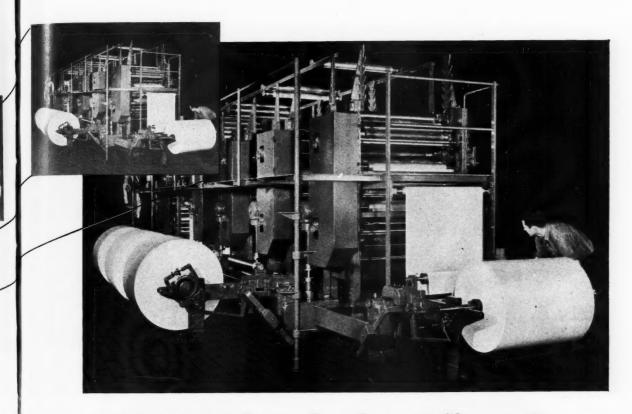
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gets ATF-Webendorfer Offset Press to Print Reader's Digest

Here's the fourth in a series of presses built for printers producing foreign editions of The Reader's Digest. This four-unit, four-color press, printing a 35-inch web at speeds exceeding 400 feet a minute, recently was delivered to Sanoma Oy, Helsinki, Finland.

It's a versatile press designed so it can be arranged to print four colors on each side of the web; or to print black on each side of four separate webs, collecting them at the folder to produce a newspaper size, tabloid size or magazine product, or a magazine product two-up.

Its capacity is from 12,000 to 14,000 double parallel fold signatures per hour, when printing digest size magazine products two-up.

Printing on standard offset stocks up to 60-pound and on machine coated papers, special quick-drying inks are utilized with a Dryer Electric Unitron drying unit. After the web passes through the dryer it runs over water cooled chilling rollers to the folder. A Reliance variable speed converting unit converts AC power to DC for smooth acceleration and operation. The press, weighing 35 tons, is 45 feet long, 12 feet wide, 10 feet high.

Previous presses for printers producing The Reader's Digest include two two-unit presses, one of which was installed in the Litografica Ypiranga plant at Sao Paulo, Brazil, and the other in the Editorial Omega plant, Havana, Cuba. A third press, in operation at the plant of Guillermo Kraft Limitada, Buenos Aires, is built for a 48-inch web, has four printing units, and delivers a 96-page signature with four colors on each side of the web.

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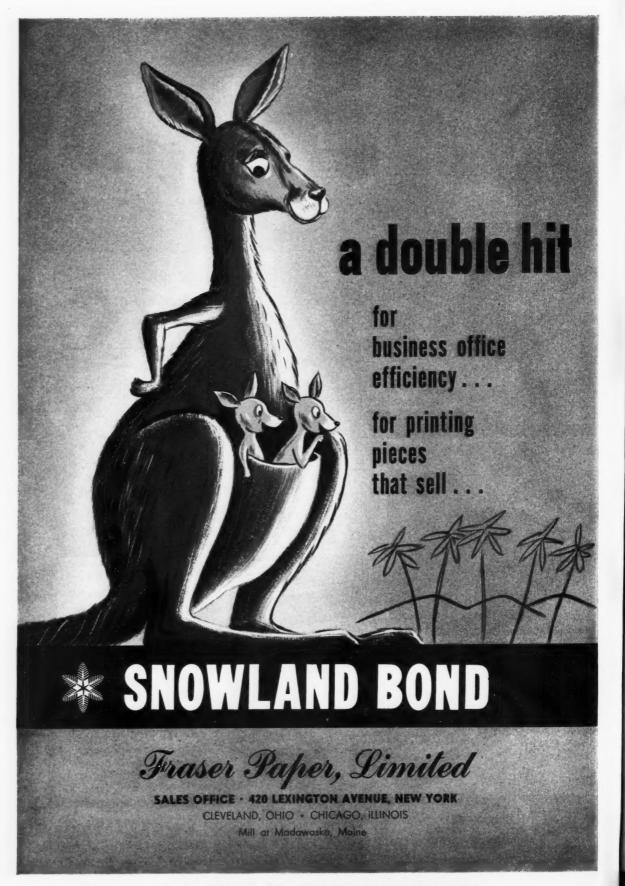
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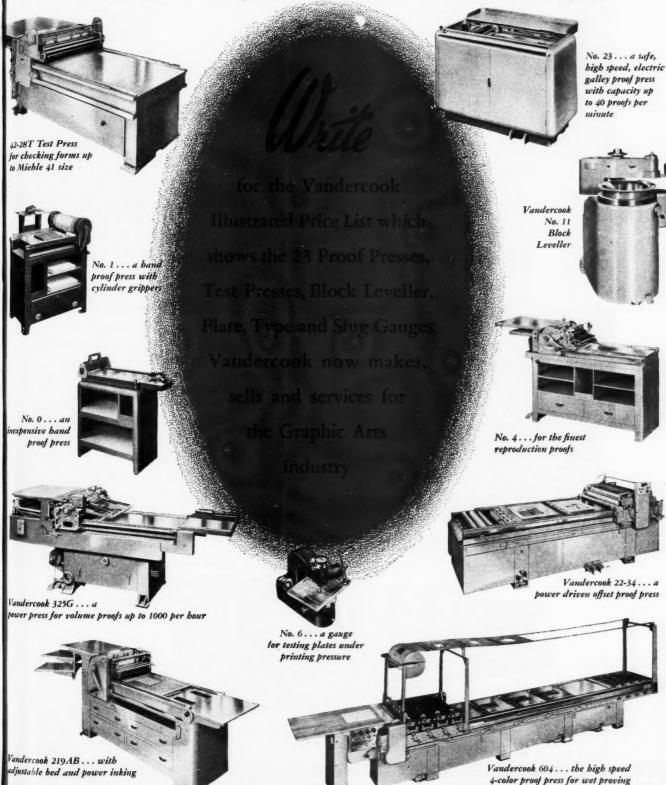


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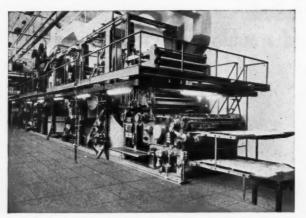
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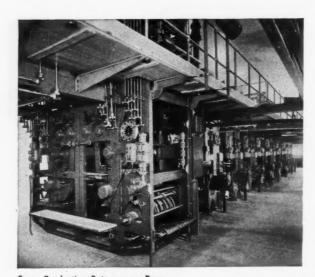




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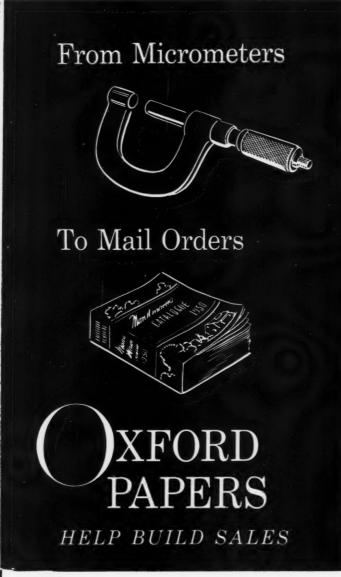
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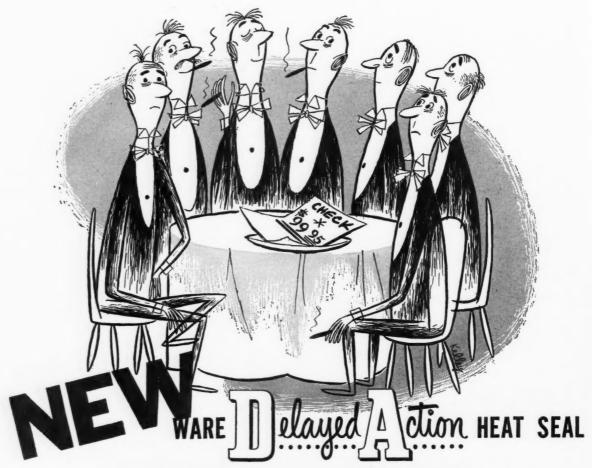
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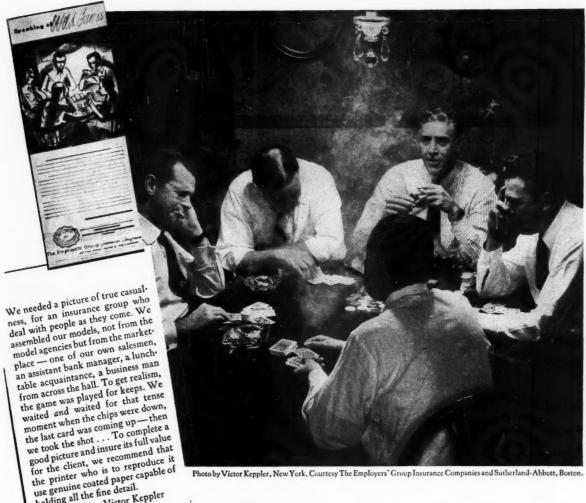


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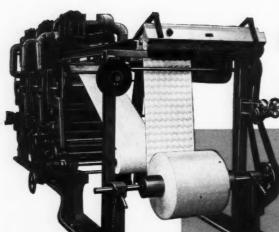
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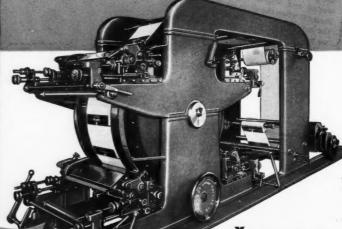
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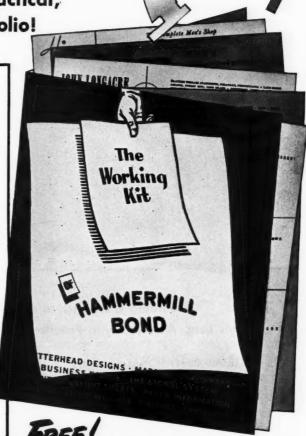
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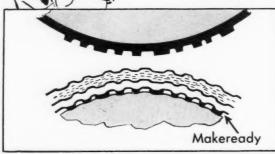
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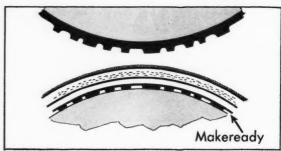


Two new tympans!

.. one protects makeready



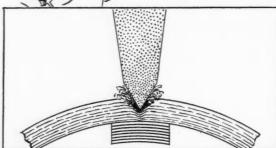
ORDINARY TYMPAN offers little protection to makeready. It's fibrous and bulky. Makeready soon beats down, must be freshened up before press run can be continued. Expensive makeready costs are wasted and valuable press time is lost.



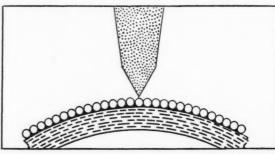
"SPHEREKOTE" 17-C TYMPAN gives makeready double protection: compressed backing sheet resists indentation, will not beat down; hard glass surface prevents edges and rules from cutting through and damaging makeready. One makeready lasts through longest press runs!



... perforate directly on the other



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- TYPE 15-D O Recommended for press perforating.

Lets you set type right up to line of perforation; no doublepress runs.

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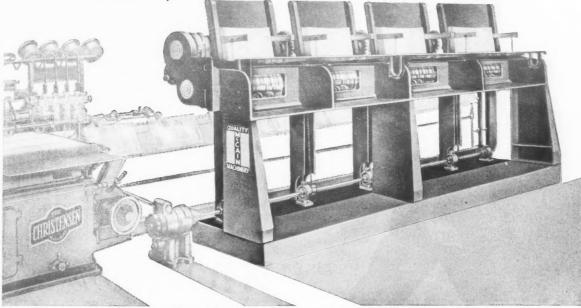
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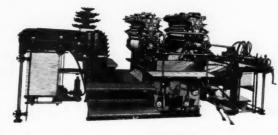
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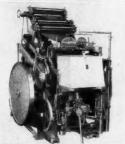
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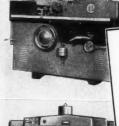
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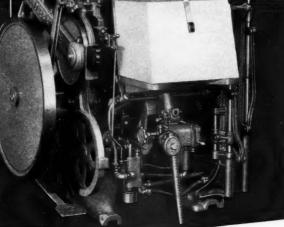














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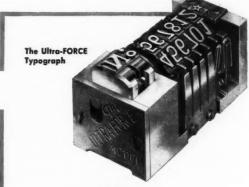
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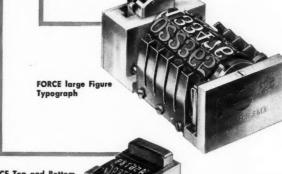


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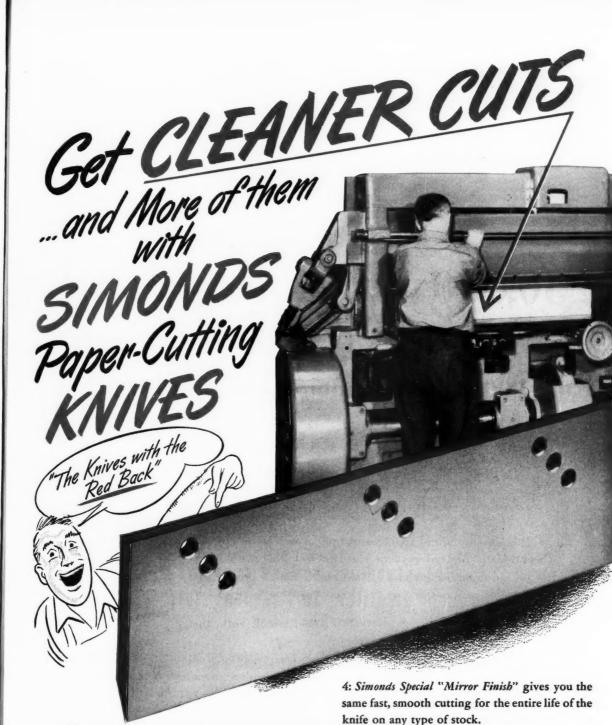
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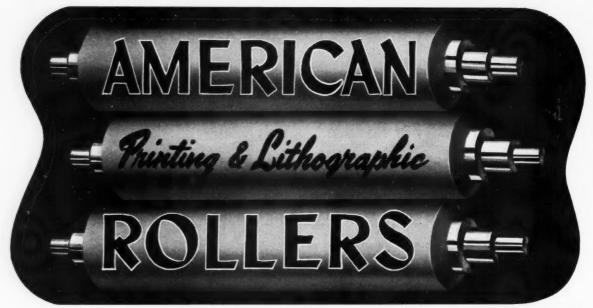
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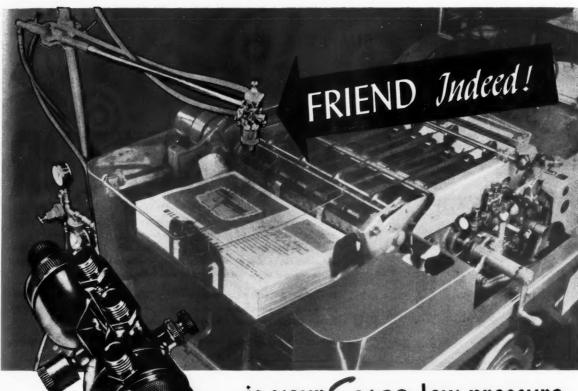
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The Ionotron Static Eliminator® was introduced to the printing industry in 1947 – not as a cure-all or panacea – but as a practical approach to static problems which had proved troublesome on certain types of presses and related equipment.

The Ionotron removes static charges by the ionization effect of alpha rays. These rays are emitted from a strip of foil containing a radioactive material. This source is commonly a carefully controlled (and highly diluted) amount of radium. It is the only long-lived emitter of alpha rays that is commercially available.

The Ionotron is one of the growing group of commercial applications of so-called "atomic energy." As such, it has been subject to a great deal of rumor.

United States Radium Corporation has had more than 30 years' experience in the industrial usage of radium-containing materials and products. In this work, we have been associated with many leading industrial companies, scientific laboratories, and the military services. It is on the basis of this background that we make the following frank answers to your questions about the Ionotron.

HOW Successful IS THE IONOTRON?

Hundreds of Ionotron Static Eliminators on printing presses and related equipment are now in operation. They range from single-color flat bed presses such as the Miehle to high-speed multi-color rotogravure presses such as the Hoe.

The Ionotron Static Eliminator cannot be successfully applied to ALL presses where static problems exist, because mechanical design of the presses may not permit effective placement or adequate shielding of the ionizing bars.

In most cases, information available at U. S. Radium Corporation will permit us to advise, in advance, whether your particular presses can be successfully equipped. In some cases, only a trial installation can settle this point. We are prepared to work with you on such experimental installations.

HOW Safe IS THE IONOTRON?

Like a flame, an electric circuit, or a fast-moving press roll, the active source of the Ionotron could be so misapplied that

a potential hazard would result. We do not wish to cloak this fact nor to ignore the concern that you or your operators may feel about the radioactive source in the pressroom.

Accurate test instruments are at hand to prove that the installations are well within the conservative safety limits established by health authorities and other experts in the field.

When the Ionotron in its improved shielded housing is installed and maintained in accordance with simple instructions furnished you, presses may be operated without hazard. On such installations, an adequate factor of safety protects even those operators who may depart from normal positions and procedures on the job. We will not recommend or furnish Ionotrons for installations when press construction will not permit effective shielding or if operating procedures will not permit compliance with instructions.

HOW MUCH DO IONOTRONS Cost?

Average installations of Ionotrons on a standard flatbed press such as the Miehle range from \$350 to \$600. On multicolor rotogravure presses, a complete static-elimination installation may involve as many as 12 separate bars and cost some \$1500. Figured in relation to the extra capacity obtained from the press in reduced spoilage and improved presswork, Ionotrons have proved able to justify the investment time after time. With the Ionotron, first cost is the only cost—the effectiveness of the unit will exceed the life of any press by many years, and it can generally be adapted and reused on replacement presses.

HOW CAN I Find Out WHAT IONOTRONS WILL DO FOR ME?

Along with factual information on the Ionotron, U. S. Radium has a simple questionnaire form ready to send you. Filled out and returned to us, it very likely will permit us to tell if your static problem can be solved in this way, and whether the Ionotron can pay its way in a safe and successful installation in your pressroom.

JUST MAIL THIS COUPON!



*Dept. K, U. S. Radium Corp., 535 Pearl Street, New York 7, N. Y.

Please send me a free copy of the illustrated bulletin, "Ionotron Static Eliminator Applied to Printing Presses." Also include detailed questionnaire concerning specific static problems.

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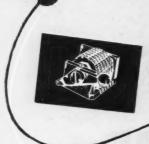
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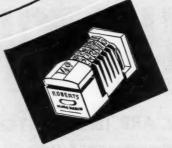
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too, just as much as your Dad and every other worker, and just the way you'll be doing. It was a matter of keeping at it day in and day out, always plugging, always doing our best, never letting slipshod work get by, always at top speed to meet production schedules, always with greatest care to maintain quality standards. And if we had ever let up for one moment, our tradition would have been shot. Still and all, it's worth the trouble when you come to think of our tradition—the best automatic platen in the whole world. That's a tradition to be proud of. And something else, Johnny. The printers share in our tradition. Their part in our tradition is buying our presses—37,000 so far.

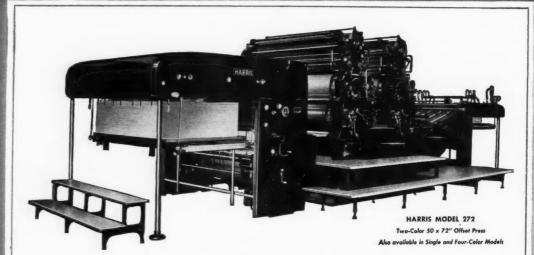




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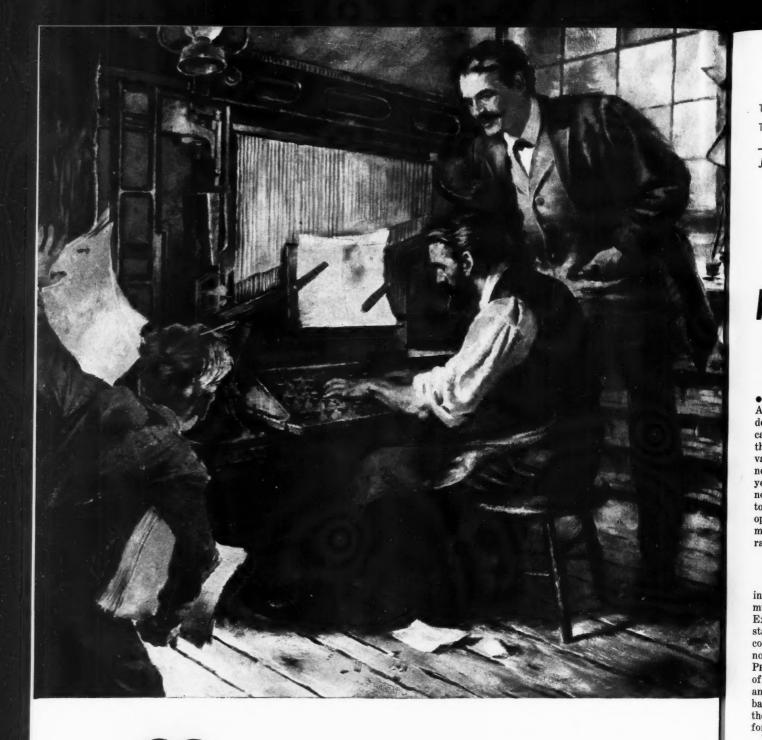
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T MID-CENTURY, this issue looks to the future of the graphic arts, but also we look back fifty years—and more—at progress already made, to pay tribute to the pioneers like those illustrated here. The painting by Herman Giesen is from Steelways, publication of American Iron and Steel Institute, which graciously permitted our use of the four-color process plates.

THE LEADING BUSINESS AND TECHICAL JOURNAL OF THE WORLD IN THE PRINTING AND ALLIED INDUSTRIES

J. L. Frazier, Editor



AUGUST, 1950 VOL. 125 • NO. 5

Manufacturers Look Ahead at What Future Holds for Next Ten Years in Graphic Arts

• The Sixth Educational Graphic Arts Exposition next month will be dedicated to technical and mechanical progress of the industry during the past decade. Many of the advances in printing operation are so new that their impact has not as yet had a real trial. Also, there has not been a full opportunity to tie together the host of separate developments and to evaluate what they mean when viewed as a whole, rather than as individual projects.

Plans Courses of Action

In order that printers and others in the graphic arts may derive as much meaning as possible from the Exposition, with a greater understanding of what its exhibits are contributing to working operations now and in the future, THE INLAND PRINTER has assembled a round-up of opinions from those in the supply and equipment field. The opinion is based on a forecast concerning what the next ten years holds in store for the printing industry.

While no one, of course, may presume to look into the future with any absolute guarantee of certainty, the suppliers and manufacturers have certain plans as to their own courses of action, as well as an opportunity to visualize developments as a whole. In their opinions, therefore, can be found a fairly accurate guide which should help printers in charting their own planning for the next decade.

In general, the survey indicates a belief that the next ten years will be marked by continuing development and improvement of the technical advances begun in the past By Ranald Savery

EASTERN EDITOR

decade, rather than any completely new or startling inventions. Even such revolutionary developments as Xerography and the Onset press cannot be termed "new," because they have reached their stages of applied research within the past few years. W. C. Huebner states definitely that his Onset press will represent the "most significant development in the printing industry" during the next decade, representing a "new union of all printing methods for finer quality, faster deliveries, and better earnings on the investment."

In the realm of "evolutionary" rather than "revolutionary" techniques, there is general agreement on a number of basic developments among most of those equipment leaders who participated in the survey. Mentioned prominently were these: Photo-typesetting will take a definite place in plant operations; lithographic printing will continue to increase its adaptability and efficiency; gravure will assume greater roles in commercial work; letterpress will, of necessity, improve its platemaking methods, cut down its makeready time, and increase its

GRAPHIC ARTS
EXPOSITION
CHICAGO-SEPTEMBER 11-23-1950

For management, there was forecast continuing and increasing efforts to cut costs through efficient operation; the necessity to improve its relations with the men in the shop, to effect a feeling of "partnership" of labor to achieve a common objective; a growing realization on the part of printers of their importance and stature in the general economic picture. There was also a feeling among some that there would be a trend toward more specialization in plants.

Increased Mechanization

In the binding field, there was a belief that increased mechanization of operations would mark the next ten years. V. M. Bowman, of the F. P. Rosback Company, commented: "The general trend over the past ten years has been toward further mechanization of bindery operations and the more general use of equipment providing greater productivity. This trend will undoubtedly continue, and at an accelerated rate, to enable management to cope with increasing labor costs and preserve proper balance between income and outgo. It appears evident that the business of printing and binding is becoming, in more and more plants, a factory production proposition, on a continuous production basis."

Highlights from other opinions offered in the survey are as follows.

Neal Dow Becker, of Intertype: "Most notable progress will be in machine photo-typesetting, in platemaking, and in lithographic printing. Photo-composing from a keyboard has been definitely established as practical. The manufacturers of

offset presses are making notable progress in the direction of speed, and the general acceptance of the web-fed offset press appears to be

not far away."

J. E. Eddy, of Miehle: "I'll not be surprised to see a number of developments in the letterpress field in the nature of cutting the costs of production—cheaper printing plates and elimination of makeready. Offset lithography will continue to improve in quality. If proper printing blankets for gravure presses would be produced, together with proper papers and suitable inks, I feel that sheet-fed gravure would make a considerable advancement."

Foresee General Progress

M. M. Reed, of Mergenthaler: "The industry has seen during the past ten years the continuation of two trends. One-a marked increase in production costs. Two-to some extent a counteractive of the firstimprovement in the speed and quality of composition, presswork, and the preparation of type and illustrative material for letterpress, offset, and gravure printing. It seems apparent that the degree to which those trends are kept in balance, or swing toward greater productivity at lower costs, will determine the degree of progress in the printing industry during the next ten years."

Mr. Reed sees a continuing demand for type faces which increase the legibility and readability of newspapers, magazines, and books, adding, "We have noted the growing acceptance of wider range machines as a means of cutting costs on headline and advertising display composition. It is my belief that an even wider use of machines which produce display types as easily as they turn out text matter will mean a further reduction of the composing room costs. As have others, the Linotype Company has developed a photocomposing machine. As to the effect of these photocomposing machines on the graphic arts generally, I concur with the statement made in a recent article on photographic composition of type in the London Times: 'Two questions arise: will the results be equal in quality, and will costs be reduced? There is not sufficient evidence to give a considered answer."

Gordon Montgomery, of Miller Printing Machinery: "We will find continuous progress in trends and developments of the past ten years. These are: Substantially increased operating speeds and quickness of get-away in machinery; improvements in the methods and materials used for preparation of printing surfaces as well as in printing surfaces themselves; commercial utility of the justifying typewriter and ultimate realization of photo-type-setting; increase of use of gravure in packaging, cartons, and publications; increased simplicity, higher operating speed, and reduced makeready time in letterpress."

Lighter Weight Materials

E. W. Worthington, of Babcock: "The most significant trend will be in the printing plate itself, rather than any radical changes in press design. The use of lighter plates is indicated, either metallic or nonmetallic, with improved methods of fastening plates on press. There will be extended use of offset, especially in web form, due to the development of bi-metallic material. In letterpress there should be extended use of the newer plastic plates, and rubber plates."

D. W. Schulkind, of E. P. Lawson: "The industry will make strides during the next ten years immeasurably greater than those of the past ten, due to the fact that scientific effort is being organized on a broader plane than in the past. The spread of education to all people over the world will undoubtedly result in increased use of printing media. I can see the steady and continued growth of the printing industry aided and assisted-definitely not hamperedby the use of radio, television, and any other media for spreading information. There is no conflict or battle between these various elements. Each complements the other."

Sam B. Anson, Jr., of Chemco: "It is probable that it won't be long before photo-typesetting units will be in use. A companion development will be some rapid and economical method of etching metal for the production of photoengraved printing plates. Economics will be the major factor in determining the extent of the use of photo-typesetting. The quality of metal-cast type is so high that it will take some years before the industry will know whether or not photo-typesetting is its future."

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James W. Corey, of Reliance Electric, commenting on the newspaper production field: "The publishers of medium-size dailies are showing steadily increasing interest in newly developed rotary presses in an effort to cut press run time. Along with the development and improvement of these rotary units has come the increasing use and keener appreciation of all-electric adjustable speed drives, engineered for printing press applications."

Comments on Specialty

In a specialty field, J. Curry Mendes comments on one-time carbon forms, saying, "There is no doubt that the printer of tomorrow, in order to effect 70 per cent of the printing service to his customers, must make and produce one-time carbon forms."

Emil Bendow, of Linotype Parts, sees generally efforts aimed at the

BOARD OF DIRECTORS OF FORTHCOMING EXHIBIT



Board of Directors of the National Graphic Arts Expositions, Incorporated, from left, front row: R. Verne Mitchell, Carl Dunnagan, Edward Christensen, Paul Clovis. Second row: Glenna Baker (Exposition office), A. E. Giegengack, Russell Herrell, Gradie Oakes, Frank Beatty, E. G. Williams. Standing: Myron Lewis, Joseph Skach, Donald Brock, Carlton Mellick. (Several directors not present)

"elimination of certain steps in the printing process, with a shift in emphasis from letterpress to offset."

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Lee Hammond, of Hammond Machinery Builders, sees a great need to "overcome the pressure of high costs." This will be done, he says, with "improved equipment and improved machinery that will tackle the cost problem and keep us in a fine competitive position. The application of these things is going on right now and will continue to for years. It will be helped along by the growing interest in research and mechanical clinics that show how to do things better and cheaper."

Keep the House in Order

A. E. Giegengack, of Lanston, agreeing with the general opinion regarding increase of gravure and offset, adds comment stressing the growing importance of "good housekeeping," particularly in the smaller and medium-size plants. He states: "Good housekeeping in a printing office means first, the careful handling of equipment to make the best use of its facilities. Even more than this, it implies the critical study of this equipment to determine its relative efficiency as compared with other equipment for a like purpose, or even to concede its obsolescence and to plan for its replacement. No new method, no new kind of machine, can be expected that will take the place of good housekeeping. My suggestion is to put the printing house in order, and to keep it so."

Lee Augustine, of Printing Machinery, emphasizes the importance of the "human element" in industry. "We believe that the printing industry, like every other industry, will devote more time and make more plans for the people who work with their equipment than with the equipment itself. This is not to say that equipment and processes are not important. Everybody knows they are. But in talking about development for the next decade, we should focus our sights on the importance of the human element in the printing industry."

W. H. Roberts, Jr., of the Eastman Kodak Company, remarks two factors concerning photography in the graphic arts which stand out above all others: the tremendous impact of color on all forms of printing and publishing, and "the fact that all the present significant advances in graphic arts technology are based on the twin sciences of photography and electronics." He foresees in the graphic arts future a continual improvement in color photography and many significant improvements in color separation techniques. Another phase of photomechanical advancement, he predicts, will be the photomechanical aspects of metal etching. "It is a fairly safe prediction that the next decade will see a tremendous growth in the use of photoelectronic principals, especially in the photomechanical phases of the graphic arts."

Mr. Roberts warns that, while the industry possesses the advantage of relative permanence, "to maintain its place in the economic sun, the industry must be willing to adopt new methods and materials just as soon as practical economics proves their worth. Only on this basis can the graphic arts industry meet the future with confidence."

E. G. Williams, of American Type Founders, sees printing increasing its importance as a basic American industry during the next decade. He believes that production efficiency will enable management to utilize printing processes on an increasingly profitable level.

"The general pattern," he states, "is distinguished by the soundness of the printing industry financially, and the general recognition of its ever-growing contribution to the national economy. Printing is as basic to American life as the food, automobile or petroleum industries. The steady year-to-year increase in consumption of fine paper in the United States means not only more business for the printer who takes the necessary steps to keep his plant modern and efficient, but is also an indication that our entire business



Exposition President A. E. Giegengack and his assistant, Russell H. Herrell exchange congratulations. Exhibit space is sold out. The Inland Printer urges its readers to make the most of this exposition. See the newest and finest in graphic arts equipment and supplies. Meet your fellow printers from all over the world. This is an opportunity. Don't miss it!

economy is dependent upon the graphic arts."

Mr. Williams foresees: "Greater use of photomechanical methods, equipment and processes; increased use of offset presses; continuing expansion in gravure; new continuing development of letterpress in smaller high-speed, automatic presses; a wider use of photographic composing machines."

This forecast may well be summed up in the words of Mr. Williams as he concluded his statements: "The next decade should see the printing industry making full use of its economic opportunities through the mastery of its management and production problems. It has gone a long way in the past ten years; it should go even further in the next ten."

INTERNATIONAL AMPHITHEATRE TEMPORARILY BECOMES WORLD'S LARGEST PRINTING PLANT



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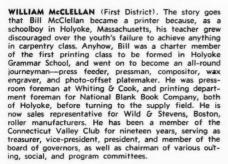


A Tribute to Achievement

Let's give credit where credit is due—to the hard-working district representatives, who spend their own time and effort (and cash) in behalf of the local Craftsmen clubs, holding them together, bringing about new groups of Craftsmen—keeping the clubs alive and alert. The work is plentiful; the glory and acclaim, little.

This year the District Representatives were named to select the recipient of THE INLAND PRINTER "Oscar" for the most outstanding Printing House Craftsman of 1950. The "Oscar" is a cast bronze bas relief plaque of Benjamin Franklin, with an inscriptional plate suitably engraved. It is the hope of THE INLAND PRINTER that this annual award will furnish an incentive to those in the Craftsmen movement, and will benefit the graphic arts as a whole.

No panel of judges seemed more fitting than the district representatives pictured here: men who are deeply interested and intimately acquainted with the ideals of the "Share Your Knowledge" organization they so capably represent.



GEORGE KEDERSHA (Second District). Although Brooklyn, New York, where George Kedersha's place of business is located, is technically a part of Long Island, George spends a considerable portion of his time in New Jersey, where he is an active member of the Newark Club. New Jersey figured prominently in his introduction to the graphic arts, for his first job, some fifteen years ago, was that of a printer in the H. Wolff book plant, which was then situated in Hoboken. He became interested in the technicalities of printing ink, and found himself working for the ink firm of Gaetjens, Berger & Wirth as a lab assistant, later for Krebs Color & Pigment Company, then for Uncle Sam in World War II. Since the war, he has rejoined Gaetjens, acting as a sales representative in New York and New Jersey. In addition to his duties as a district representative, he is the president of the Second District Officers Association.

ALBERT L. KOLB (Third District). Son of a printer, Al Kolb served his apprenticeship in his father's shop in Buffalo, New York, discovering his first type lice when a mere stripling of thirteen. He worked as a journeyman

in several other Buffalo plants until the first World War, where he saw service in the Medical Corps. After that interruption he went back to his home city and organized the printing department of the Marine Trust Company, parent unit of the Marine Midland Group of banks. He has managed this department for thirty years. Al joined the Buffalo Club in 1937, and has been a member of the board of governors continuously since 1939. He has also been treasurer, vice-president, and president. Among his other activities, he is a member of the Greater Buffalo Advertising Club.

HARRY CHRISTOPHER (Fourth District). There is an old tradition that in order to print you have to have paper. For the past twenty-three years Harry Christopher has been doing his bit in seeing to it that printers in the Baltimore, Maryland, area are kept supplied with paper. At the present time he is president and treasurer of the Paper Supply Company, Baltimore Club. He is a past president; in fact, at one time or another, he has held every office in the organization except that of secretary. Some day, perhaps, the boys will close in and elect him secretary, just to polish off the record

ALVIN F. FRIEDRICH (Fifth District). In his job, Al Friedrich gets around, and one of the things he likes to do while he's getting around is to help organize Craftsmen's clubs. To date, he has assisted in the chartering activities of four clubs in the Fifth District. His own team is Indianapolis, Indiana, where he is currently serving as first vice-president. During his twenty-five years of maturity, Al has concentrated mainly on electrotyping, although he operated a small printing plant for a period in 1929-31. He learned his electrotyping trade in Cleveland, and subsequently ran the occupational gamut of finisher, foreman, superintendent, plant manager, and salesman. His current affiliation is the Process Color Plate Company, for which concern he acts as vice-president and midwest sales manager. Graphic arts and educational groups in this territory know him as a popular, informative speaker.



WILLIAM McCLELLAN



GEORGE KEDERSHA



ALBERT L. KOLB



HARRY CHRISTOPHER

950



ALVIN F. FRIEDRICH



FRED L. BRYANT



G. ELMER LEACH

FIELDING A. UTZ (Sixth District). Soon after he parted company with the 107th Engineers of the 32nd Division at the end of World War I, Fielding A. Utz became associated with the Milwaukee Printers Roller Company, Milwaukee, Wisconsin. He states that he has served fhis company in various capacities continuously for thirty-one years, adding as an afterthought that he has been president of the firm since 1936. He has been an active member of the Milwaukee Club for past fifteen years.

FRED L. BRYANT (Seventh District). For some twenty-odd years before he became southeastern representative for the Miehle Printing Press & Manufacturing Company, Fred Bryant learned about presses from the printer's side of the delivery pile. A native of Atlanta, Georgia, Fred first whiffed printer's link in the plant of Foote & Davies in that city. Thereafter he plied his trade in the printing department of the Retail Credit Company, and then for nineteen years was with Ruralist Press. Currently with Miehle, he works out of the Atlanta office. He is a charter member of the Atlanta Club, is a past president, and a former president of the Seventh District Conference.

G. ELMER LEACH (Eighth District). No need to ask, "Where's Elmer?" for G. Elmer Leach has never gotten very far away from a printing shop since he first learned the difference between thin spaces and thick faces. Starting as a young roustabout in country newspaper shops, he made the climb to full-fledged printer, and later assumed the responsibilities of foreman and assistant superintendent in several large plants. At the present time he is busily engaged in owning and managing the Leach Printing Company in Des Moines, lowa. Fifteen years a Craftsman, he has served the Des Moines Club in every office from secretary to president. He has been in on every International convention since 1941, and the past ten International board meetings.

JOHN A. SCOTT (Ninth District). That man from Texas is John A. Scott, who became personnally familiar with a vast number of linotype keyboards in Beaumont, Galveston, Paris, and Dallas before he set himself up in a management seat. Six years ago, after operating weekly newspapers and a commercial printing shop throughout the open spaces, he established a trade composition house, the John A. Scott Company, in Dallas, which services, among other clients, the booming advertising field in that section. One of his specialties is production of plastic printing plates, and he is regarded as a pioneer technician in that branch of the industry. An enthusiatic Craftsman, he calls club work his only hobby. Currently enrolled with the Dallas Club, of which he is a past president, he also has served under the banner of the Fort Worth aggregation.

RON A. HULL (Tenth District). Since 1925, Ron A. Hull has been professionally investigating various phases of the graphic arts. A pressman for ten years, he also has filled in composing room and bindery time sheets, and for a considerable period was superintendent of a large paper-converting plant in Vancouver, British Columbia. Now he is in the supply field as branch manager for British Columbia for Sears Limited. He joined the Vancouver Club in 1936, is a member of the board of governors, and served as vice-president and president. Among other club activities, he was president of the Junior Club for Apprentices, and was instrumental in organizing the Senior Club after the past war.

HAYWOOD H. HUNT (Eleventh District). A North Carolinian by birth, 'Haywood Hunt embarked on a printing hegira at the age of fifteen which covered major portions of the North American continent from Virginia to British Columbia. Thirty-five years ago he chose San Francisco as the best place in the world to work

and live, and has never changed his mind. In 1940, he hung up a sign, "Haywood H. Hunt, Typography and Printing," and that's what he does. Craftsmen everywhere are familiar with his name as editor and printer of Share Your Knowledge Review for nine years starting in 1933. He is a charter member of the San Francisco Bay Cities Club, established in 1921, and has been vice-president and president. He was also a member of the original committee which started the Pacific Society of Printing House Craftsmen in 1926, serving as its first provisional president, then president for two terms.

LEE FARMER (Twelfth District). If you have the press, the printing form and the paper, you still need ink to get on with the job. It is the latter principle that has served as the guide rule for Lee Farmer throughout his business career. Specifically, he has engaged in the printing ink business in Los Angeles and on the Pacific Coast for thirty-five years. At present he is president of the Pacific Printing Ink Company, having started with the firm by opening the Los Angeles branch as manager in 1941. Lee is a charter member of the Los Angeles Club, served as a member of the first board of governors in 1922, and cheerfully and successfully contributed his talents as chairman of the membership committee and chairman of the reception committee for many years. Among his achievements is authorship of the name, Craft-O-Graphs, for the Club's monthly publication.

HERBERT THRELFALL (Thirteenth District). The record of Herbert Threlfall as a distinguished Craftsman is well known to one and all. He served five years as International secretary, the last elected official to that office, and was editor for eleven years of Craftsmen's Crier. A printer since he was a "bound-out" apprentice at the age of thirteen in his native England, he is now president of the John F. Greene Company, Providence, Rhode Island. He is a charter member of the Providence Club, served as secretary during two different periods, and has been, successively, educational chairman, vice-president, and president. In 1941, he was accorded the honor of life membership in the Club.

RUSSELL HIGNELL (Fourteenth District). There was never any question about choosing a career for Russ Hignell, for he is one of the breed whose veins contain a permanent solution of printer's ink. As soon as he finished high school in his native Winnipeg, Canada, he went to work in his father's shop, acquiring a practiced hand in all mechanical departments. Hignell Printing Limited now carries on its business with Russ as president. He is a charter member and a past president of the Winnipeg Club. In addition, he is active in the Winnipeg Printers & Lithographers Association, with a term of president of that organization to his credit, and he also served as a president of the National Council of Employing Printers and Lithographers.

DeWITT A. PATTERSON (Foreign Representative). For a man who started out to be an artist, DeWitt A. Patrerson has chartered a remarkable range of experience and accomplishments. What happened was that, as an art director in Chicago, he took a job with a printer, where he eventually became vice-president of the company. With that twenty-four year career behind him, he embarked on another one in 1942 when he was named by the State Department as chief of the printing division of the Office of War Information. From then on, he traveled abroad almost continuously until 1947, including two years after the war as a peripatetic emissary for Crowell-Collier. Now he is manager of platemaking operations for Alco Gravure and Color Engravers, Chicago. He has been a member of the Chicago Club since 1931, and was elected president in 1936. He has also held office in the International—educational chairman and vice-president.



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RON A. HULL



HERBERT THRELFALL



RUSSELL HIGNELL



JOHN A. SCOTT



HAYWOOD H. HUNT



LEE FARMER



DeWITT A. PATTERSON

By Louis Flader

THE DICTIONARY defines engraving as "The act or art of producing upon hard material incised or raised patterns, characters, lines, etc., especially in the surface of metal plates or blocks of wood. Engraving is used for the decoration of the surface itself, as in silver and gold plate, and also for producing an original from which a pattern or design may be printed on paper." In this dissertation it is the intention to deal only with engraving as this is applied in the graphic arts—as an element or component of printing.

The first engraver, as far as is known, was a cave man of the paleolithic age, possibly 30,000 years B.C., who engraved pictorial messages on the stone walls of caves in southern France. This individual was also the first known advertiser, and while his efforts constituted perhaps the most dramatic moment in engraving since it marked its beginning, it had at least a tinge of romance. These early engravings portray wild animals, hunters, and weapons, and may have been motivated by the desire to attract and impress the female of the species of that period.

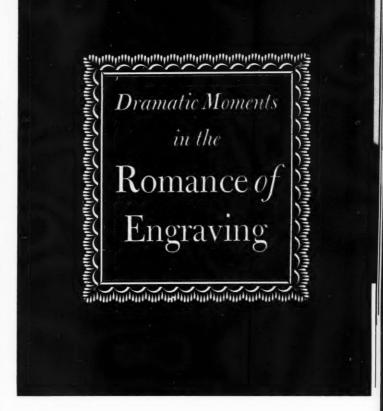
Our Cro-Magnon friend, through the medium of his engravings, perhaps served notice on one and sundry that he was handy with his stone ax and would not hesitate to use it, and those who strayed into his cave perhaps interpreted his handiwork as reading "no trespassing."

Some thousands of years passed without any known developments in engraving. The Bible states that the Lord ordered engravings from Moses to be done on stone tablets, on beryl, and on gold. Presumably, some one or more members of the flock had the talents and skills to carry out the order.

It is generally believed that the Chinese were the first to employ engraving in connection with printing. Archaeologists tell us that it was first practiced about 1200 years ago. The Chinese began to make books during that period and it was their practice to draw all the characters to be printed on one page on a block of wood. This was then engraved by cutting away the nonprinting areas, leaving the printing surfaces in relief. It is not known how the actual printing was accomplished, since there is no evidence that any mechanical device was involved. It must have been a highly dramatic moment in the lives of those who wrought this miracle, as it certainly was in the romance of printing.

Most historians and researchers credit Johann Gutenberg with the invention of movable type in A.D. 1440. His invention is considered by many to be the greatest of all time, since it makes possible the transmission of all knowledge in permanent form, thus earning for printing the sobriquet, "The Art Preservative of Arts."

Prior to Gutenberg's invention books were produced chiefly by monks who drew each character by



hand and who developed great skill and artistry in supplying decorations to "illuminate" the text. In this procedure it required years of constant application to turn out a single volume of any size.

With the invention of movable type it was possible to produce with ease and in a comparatively short space of time the entire text for a book and, this having been set in type, any number of impressions could be made.

In the beginning no method was known to illustrate and illuminate the text of the printed page. Where illustrations were deemed of sufficient importance and value, they were drawn and colored by hand, which from the standpoint of artistry was a considerable achievement, but it did not fill the bill due to the scarcity of artists capable or willing to undertake such work and the amount of time consumed in its execution.

It soon occurred to one or more that if the letters of the alphabet could be cut in metal, ornaments and illustrations could be done in like manner. It remained with Albrecht Dürer and some of his contemporaries to firmly establish the art of engraving printing plates. Dürer began his career as an artist, and while he gained considerable fame as a painter, he is best known for his woodcuts, most of which were of a religious character. Dürer and the younger Holbein and Cranach were the best known artistengravers of that period; they engraved on various metals, but most of their illustrations were engraved on wood.

Engraving, being linked to and a component part of printing, developed slowly during the sixteenth,

seventeenth, and eighteenth centuries, keeping pace with the progress made in printing, this being slow during that entire period. Printing plates were engraved on various metals, such as zinc, copper, and alloys, with wood engraving registering the greatest advance due to the character of the work and the comparative ease and speed with which it could be performed. Engravings on steel and copper were intaglio in character; namely, all lines and dots were cut into the material, and in printing the incised portions were filled with ink, the top of the plate was wiped clean, and an impression on paper was made by application of pressure sufficiently great to force the paper into the incisions to take the ink deposited therein. The greatest advance, and the height of perfection in copper and steel engraving, was reached about the middle and latter half of the nineteenth century, when a great variety of fine engravings were produced to illustrate the outstanding books of that period. At the present time copper and steel engravings are used almost entirely in the production of paper currency, securities, greeting cards, and such, while much of the latter variety is no longer engraved by hand, the results being obtained by photomechanical means.

During the period between approximately 1850 and 1890 printing grew tremendously due to the fact that it could be produced in far greater volume than ever before. As the production of printing increased, so did the use of printing increase; the latter as a rule

growing faster than the former.

With the increase of publications came the growing demand for illustrations. This created the "golden age of wood engraving." Engraving as a fine art, and in the modern manner, had its beginning with Thomas Bewick of England about the turn of the eighteenth century. The early engravers, during the Dürer period, resorted largely to cross-hatching; namely, the crossing of black lines, giving the print made from such engravings somewhat the appearance of fine pen drawings. The method which came into use during Bewick's time depended upon lines cut into the block, which thus represented a solid black background. In the early days of wood engraving the engraver was generally an artist and drew his designs in pen or pencil on the block of wood. He then cut away the parts not covered by his design. Next came a demand for delicately shaded effects to simulate continuous tones, and engraving became more complicated and a much greater and different degree of skill was required since the engraver destroyed the design as he worked. Eventually, the engraver depended entirely upon the artist to draw the illustration on the block and concerned himself solely with engraving it in such a manner that it would reproduce all the shades and nuances of the illustration.

Wood engraving flourished following Bewick's demise in 1828 and a large number of highly skilled engravers gradually came to the fore. Many of their works are now considered museum pieces. Among American wood engravers, Timothy Cole, an Englishborn American, was considered not only the greatest

wood engraver in the United States, but many authorities proclaimed him to be the best of all. Practically all of the world masterpieces were reproduced by Cole and some of his contemporaries.

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However, engraving on wood and metal did not suffice, and a Bavarian, Alois Senefelder, in 1796 is credited with inventing lithography. This undoubtedly was a dramatic moment in his life and the romance of engraving, and as legend has it, he stumbled upon his invention by accident. However, the facts indicate that the invention of lithography resulted from a number of experiments conducted over a period of time. Senefelder drew a design on soft porous stone with a greasy substance and then applied acid to the surface, resulting in a slight etch which did not affect the design, but which made the surface of the stone water-receptive. A print was obtained by moistening the entire surface of the stone, and since the design drawn in a greasy substance would reject moisture and accept grease (ink), and the non-printing surface of the stone would reject ink, an impression or print of the design was thus obtained. Lithography continued to progress, but because of the cumbersome and time-consuming methods and materials involved, it began to decline until the beginning of the twentieth century, when the combination of photography and lithography caused a rebirth of the older method and brought into being photolithography, using an entirely new and different method of platemaking and printing.

Wax engraving, another method of producing fine lines and small characters in relief, was invented by Edward Palmer in 1842 and was first employed in America in 1850, being used largely in map-making. A film of wax is evenly deposited on a sheet of polished metal and all printing characters are cut into the wax down to the metal. The engraved plate is then treated the same as a wax mold in electrotyping, the finished

product being an electrotype.

While lithography, metal, and wood engraving produced excellent results, all of these were accomplished by purely manual efforts, and as printing presses were developed, each capable of increasing the speed of printing, it became apparent that in order to keep pace with the rapid expansion of printing, a method was needed to produce illustrations in less time and at lower cost.

The early inventors, scientists, and experimenters turned to photography as a means of achieving the

desired goal.

Photoengraving came upon the scene. Photoengraving might be defined as the process or procedure producing relief and intaglio printing plates by the aid of photography and mechanical means. It is the oldest of all photomechanical processes and traces its history to the very beginning of the photographic arts. The first photoengraving was made in 1826 by a Frenchman, Joseph Nicephore Niepcé, who in the next few years collaborated with Louis J. M. Daguerre in the early development of the daguerreotype, introduced in 1839 as the first practical process of photography. The

Niepcé photoengraving effort thus preceded the official introduction of photography by some thirteen years.

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Niepcé's result was in the form of a photo intaglio (gravure) etching in which a proof from the original engraving of Cardinal d'Amboise served as a positive. An image of this positive was obtained by contact printing on a pewter plate sensitized with a solution of asphaltum. The low sensitivity of this material, coupled with lack of translucency in the proof, required an exposure of three hours in bright summer sunlight. The photoprint from this positive was etched with acetic acid. Prints from this plate were made by a copperplate printer. Thus was produced the first photoengraving. Had Niepcé been in possession of a negative, a relief etching could have been made by the same procedure.

Here, indeed, was a dramatic moment in the romance of engraving, since Niepcé's achievement laid the foundation for the photo-reproductive arts as these are practiced today, and which for all practical purposes, displaced and superseded all known methods

of manual printing plate production.

Relief etchings were made on copper in 1823 by A. Dembour, and the first to make relief etchings on zinc was an Austrian, Blasius Hofel, in 1840. The man who really established zinc etching was a Frenchman, Firmin Gillot, who in 1850 produced a zinc etching of a sketch of Johann Gutenberg which he had drawn on a litho stone, after which an impression therefrom was transferred to a zinc plate and etched into relief with nitric acid.

The employment of photography for the production of printing plates was spurred by the introduction of the wet collodion process which offered a facile medium for negative making. This process was introduced in 1851 by the Englishman, Frederick Scott Archer, who also devised a method of stripping or removing the photographic image from its glass support in 1855. William Henry Fox Talbot, a British scientist, in 1852 discovered the photogravure process, based upon the principle that a layer of bichromated gelatin becomes insoluble under the influence of light. Talbot employed a "screen" consisting of two or more folds of black gauze which was placed between the positive and the sensitized plate, and which really served the purpose of a primitive form of contact halftone screen. This procedure has been deemed the first halftone experiment—it aimed at dividing the printing surface into a system of lines and dots as an aid in translating the tones and detail of the original reproduction. In 1878 the Bohemian artist, Karel Klic, invented the process of rotary intaglio printing, known today as rotogravure.

While all the developments in engraving as herein noted are important and progressive, the most successful of these were reproductions in line made from either drawn or printed originals. Something more was wanted; namely, a mechanical method to reproduce the entire range of lights and shades of an original rendered in continuous tone, such as a painting,

FLADER

The words are almost synonymous: Flader and photoengraving. A leader in the secession of photoengravers from the I.T.U. in 1900, and for five years president of the International Photo-Engravers' Association born of that breach, Louis Flader then spent thirty-five years as Commissioner of the American Photo-Engravers Association, and editor and manager of its Bulletin.

He brought order and standardization to a chaotic industry. Persistent and aggressive, his efforts brought about the standard scale for photoengraving and the standard cost-finding system.

Master of his craft, Flader's quick mind and resourcefulness have been turned on every problem that has faced the business of photoengraving in the past half-century. Employer and employee alike have benefitted from his devotion to the industry.

Flader is a convincing and entertaining speaker—and writes



in the same comfortable style. His articles are always welcomed by technical journals. Two books are among his permanent contributions to the graphic arts: the monumental Achievement in Photo-Engraving and Letter Press Printing (1927), and his recent Modern Photoengraving, a book which he wrote in collaboration with J. S. Mertle.

a wash drawing, or a photograph. The exact discovery and application of a method suitable for this purpose is somewhat clouded, as most of the early researchers and experimenters carried on their activities in secret. Because of this, several perhaps made the same or similar discoveries, not being aware that others were engaged in like efforts. The pioneers in photoengraving conceived the idea that it would be necessary to break up the continuous tones of the original into lines or dots of varying fineness to interpret, re-create, and reproduce the original. Thus a Canadian, William Leggo, produced a photographic cross-line screen in 1869, which was used in producing the photolithographic reproduction of a portrait of Prince Arthur, printed on the front page of the introductory issue (October 30, 1869) of the Canadian Illustrated News, published in Montreal. This, apparently, did not attract too much attention because in 1882 a Bavarian, George Meisenback, employed a single-line screen for halftone production. He evolved a method of turning the screen after one-half the exposure had been given, thereby gaining in principle at least the effect of a cross-line screen.

In Philadelphia, Fredric E. Ives, after many experiments, in 1885, produced the first mechanically ruled cross-line screen by inscribing a series of parallel lines on the opaque film of an exposed and developed wet collodion plate. A wood engraver's ruling machine was used for the work and two plates were ruled, each bearing a set of lines of a definite number per inch.

After ruling, the plates were cemented together with Canada balsam, the lines of the screen crossing each other at right angles to form transparent squares or

screen apertures.

It finally remained for another Philadelphian, Max Levy, to commercially introduce ruled and etched screens for halftone photography, the idea being conceived by his brother, Louis Levy. The first Levy screens were made in 1886, but real perfection was not attained until after Max Levy's invention in 1893 of a special automatic ruling machine. The ruling was done on glass plates coated with an acid-resisting varnish, the machine cutting a series of parallel lines into the varnish and exposing the glass support. The lines were etched into the glass, after which they were filled with an opaque pigment and the etching ground removed with a suitable solvent. As in the Ives procedure, two ruled and pigmented plates were cemented together to form the halftone screen of commerce. It was Ives and Levy who made the printing world conscious of the utility and flexibility of the halftone process, which process was first carried to high perfection in photoengraving. With the introduction of halftone illustrations, photoengraving became an important industry, capable of faithfully reproducing any type of copy or original, and of producing plates for any type of relief printing press. Later improvements in the process did not change the principle of the method, which today remains the most direct procedure of quality platemaking.

Stephen Henry Horgan in conducting experiments in photomechanical reproduction, like others engaged in similar pursuits, concluded that the continuous tones of an original might possibly be translated of firmly establishing the principle of three-color photography in 1862 goes to a Frenchman, Louis Ducos du Hauron, who was also the first to produce a three-color print by subtractive synthesis in 1869. The print was made by superimposing images produced on sheets of tri-color carbon tissues, using a hand-painted circular spectrum as the original for reproduction.

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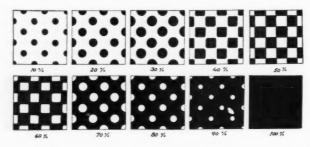
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The first three-color single-line halftone was made in 1881 by Frederic E. Ives. It was displayed at an exposition in Philadelphia, in 1885. Halftone color reproduction also received the attention in 1890 of two European investigators, Jacob Husnik and Eugene Albert. Other experiments were carried on in Berlin by Emil Ullrich, a lithographer, and Ernst Vogel, son of Herman W. Vogel, famous discoverer in 1873 of the principle of color sensitizing photographic emulsions by the addition of certain analine dyes.

The Ullrich-Vogel efforts aroused the interest of a well known New York photographer, William Kurtz, who induced Ernst Vogel to come to the United States in 1892 to perfect halftone color plates for letterpress printing. Kurtz was not satisfied with Vogel's results in his gallery, and on the return of Vogel to Germany, he launched his own research program and produced a single-line tri-color halftone reproduction of a fruit study, which was printed in the March 1893 issue of the Engraver and Printer, a Boston publication of that time. This was the first three-color halftone reproduction to appear in public print in the United States, and it is interesting to note that the single-line halftone separation prints were made on zinc, sensitized with asphaltum, the same type of sensitizer used by Niepcé, the father of photoengraving. While Kurtz employed the single-line screen,



The halftone screen is said to be the most important basic invention in all photomechanical reproduction. The different dot formations illustrated in this greatly enlarged tonal scale are obtained by diaphragm manipulations in the lens while the light travels through transparent portions of screen with its uniform lines and dots.

through a grating or screen of some kind. He used a variety of gratings between 1877 and 1880, including a screen made of perforated cardboard. In 1880 he made a photomechanical reproduction of a scene entitled, "Shanty Town," which proved to be a halftone capable of being printed in a newspaper, and it was so printed in the New York *Daily Graphic* and is considered as the first newspaper halftone. A look at today's newspapers proves that Horgan really started something.

Another dramatic moment in the romance of engraving was the origin of color process reproduction which is traced to the British physicist, James Clerk Maxwell, who in 1859 projected a three-color image of a bow of ribbons by means of separation negatives taken on wet collodion plates. However, the credit

it should be remembered that he followed the basic principle and method of the European Vogel, and that cross-line halftone screens of the present type are strictly an American invention. The invention of the halftone cannot be definitely credited to any one individual. It is the result of a series of discoveries and inventions by many workers and students in different parts of the world.

All of the original and subsequent experiments in the effort to create a halftone screen to enable the photoengraver to faithfully reproduce all the shades of a continuous tone original were sufficiently successful to launch the halftone process as an important commercial venture. It was not until 1893 when Max and Louis Levy perfected the ruling machine for ruling halftone screens that the halftone process began to

attract attention. Wood engravers had a virtual monopoly on production of illustrations for printing, and while at first they were skeptical and highly critical of the process and its products, they quickly became apprehensive and soon learned that the halftone process was destined to become a powerful competitor. This indeed proved to be the case. As photoengraving, both in line and halftone, grew, wood engraving declined until in a comparatively short period the volume of wood engraving had shrunk greatly and the number of wood engravers declined proportionately. Wood engraving was then used chiefly for special purposes, but in the past twenty years or so, it has practically passed out of existence and today can be classed among the lost arts.

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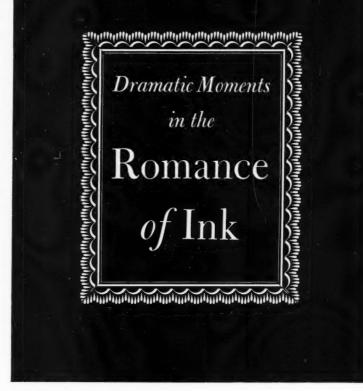
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The transition of all forms of manual engraving to photoengraving took place as fast as men could be taught the photoengraving processes. The rapidly increasing use of photoengravings compelled press manufacturers, paper makers, and ink makers to change their methods of production and their products to accommodate the fine texture of the halftone. Photoengraving came into widespread use at the beginning of the present century and furnished the greatest impetus to printing and the uses of printed matter in world history.

Photoengraving and the halftone process made it possible to reproduce originals of every character in exact proportion and with otherwise unattainable fidelity. In addition, it brought into the graphic arts the element of speed in the production of illustrations hitherto not only impossible but undreamed of. The size of the hand-engraved block or plate had very little relation to the amount of time consumed in its making. A complicated subject, such as an intricate piece of machinery, might take hours and hours of the artist's time to draw it on a wood block. It might then take the engraver days to do his work. In photoengraving, the character of the subject to be reproduced has very little bearing upon the time consumed. No more time is required to obtain a photographic image of a subject containing the most minute and intricate detail than in obtaining a photographic reproduction of one extremely simple. The original reflects the light rays directed upon it in every case with the same facility and speed, and fixes its image upon the light-sensitive plate in the camera after passing through the lens and the halftone screen.

The basic principles in photoengraving having been established as herein recorded, their application spread into three different directions, involving three distinct platemaking and printing processes—photoengraving and letterpress printing; rotogravure platemaking and printing; and offset lithographic platemaking and printing. It remained for inventors and craftsmen to improve and perfect each of these and with the constantly rising costs of labor, practically every step in both platemaking and printing has been improved with a view of making a better product in less time and, therefore, at lower cost.

To be concluded in the September issue.



By Charles R. Conquergood

"MIGHTY OAKS from tiny acorns grow." However, if you were to examine the roots of the mighty oak you would find no trace whatever of that tiny acorn from which its growth began.

Much of the same situation exists when you look at the printing ink industry. Today it is a sizable and mighty important key industry. Only a trace of its beginnings can be found in the confused and musty records of antiquity. The confusion comes from the fact that the earliest producers of transferred impressions—now known as printing—adopted and adapted the materials for their ink from scribes of their day.

Printing from carved blocks can be traced in China many years prior to the Christian era, and followed through Japan, India, Asia, and Europe up to the year in which Gutenberg made printing history by the use of individual letters. Then for two hundred years printing plants spread throughout Europe, during which time the printers made their own inks.

Let us pause here to relate the conditions of this era, as set out by Frank Wiborg in his book "Printing Ink—A History." When ready to manufacture a new batch of ink for the season, the master printer, with his assistants and apprentices, their families and friends, would take a holiday. The merry-makers would gather around. A fire would be built, over which would be hung a huge iron pot for the boiling of linseed oil. The banquet or picnic dinner included bread that had been roasted or fried in hot linseed oil. Later on, by means of muller and slab, pigment was ground with boiled oil and good ink produced.

One of the earliest references to commercial inkmaking is found in Moxon's Mechanics Exercises, dated 1683. While this may not have been very complimentary to the quality of the ink, it was reported that quality depended on the "conscience of the ink maker." It was not until 1755, a scant two hundred years ago, when William Blackwell, in England, founded his inkmaking business, that the new industry can be declared as being successfully sprouted.

In America, as well as in Europe, the use of printing ink was spreading. Printing had brought a great new era of general education, first for the classes, then for the masses. In 1804, Charles Johnson of Philadelphia started an ink plant which has been in

continuous operation since that time.

During the same century, there were other factors that contributed to the improvements in both volume and quality. It has long been known that white light contains all of the colors of the spectrum. The science of physics made still more progress but the science of chemistry burst the bonds of the medicine man and the alchemist, to amaze and enrich life.

It was a momentous occasion in 1856, when William Perkins, a seventeen year old student in Royal College of Chemistry in England, produced a purple color from coal tar. Now, we know that black coal stored away the sunlight and color of the ages, since by devious chemical stages we can secure a range of colorants, which, reflecting the light of today, will vie with the rainbow. This was the beginning of a color range, important, especially to the inkmaker, for it provided pigments for ink with marked improvement in strength and cleanliness over previous pigments, some of them natural earth colors.

Another supplementary factor was the introduction late in the nineteenth century of the halftone process, for use in the reproduction of pictures. This process, with the development of photography, is the foundation of a great volume of printing illustration, including the four-color process in current use in our colorful magazines.

With new colors, new engravings, improvements in papers and presses, and new outlets for printing at the beginning of this century it seemed that the ink

industry was coming into its own.

Indeed the world of merchandising was beginning to change. Goods formerly sold in bulk were finding better sales in packages. The ink industry grew in all branches and considerable progress was made in the general improvement of the printing qualities and diversity of inks.

The first thirteen years of this century lived up to expectations. Then came the war! The first World War of 1914-1918 fought "to make the world safe for democracy" proved also a fight for the ink industry in America, to keep the lamp of learning brightly burning. Germany and Great Britain supplied to us not only fine pigment colors but many of the raw materials for use by color makers on this continent. On the outbreak of war, many materials were no longer available. Inkmakers found themselves without many needed items, more especially colors for process printing and other fine inks. The war demands for oil

also affected the supply of ink materials. The tragedy of these shortages was accompanied by another event which produced a shortage as troublesome as smoke in your eyes.

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By 1915 the automobile industry was on the way to becoming the giant that it now is. Rubber tires increased the need for more rubber. It was then discovered that by adding carbon black to rubber the life of a tire would be increased several times. Carbon black is smoke from natural gas and the black for all black inks. Until then, the inkmakers had been the largest consumers of carbon black, but overnight the demand for carbon skyrocketed. Tire manufacturers could use the entire available supply to satisfy only a portion of their requirements. Inkmakers suddenly became minor consumers instead of the major ones, facing the problem not merely of prices but of supply as well. With shortages in both black and colors, and an increased demand for ink, the situation became so tense that the problem of any supply was more important than quality.

Many stories are told of the resourcefulness of the inkmakers of the period. It is related that in a storage warehouse there was a hundred-pound keg of dyestuff ordered to be taken to the dump as of no value. Delay in carrying out the dumping order proved fortunate for an inkmaker who happened to hear about it. Not daring to reveal its latent possibility, he offered a dollar for the keg, which was accepted. The dyestuff was turned over to a colormaker, who was able to produce several hundred pounds of pigment color worth several hundred dollars. This was later made into ink and rationed to the inkmaker's customers.

Another well authenticated story comes from the period before we entered World War I. It seems that the Germans rebuilt a cruiser submarine named "The Deutchland" as a commercial carrier. The Deutchland made several trips from Germany to the United States, going under the blockading fleet. Being unarmed, she could not be considered anything other than a blockade runner. Under international marine law, the vessel was permitted to remain in port only a very limited time before having to return to the seas. In New York, at the time, was an importer named Herman Metz and he arranged with Phillip Ruxton Ink Company, that on one of the trips the Deutchland should contain nothing but dyestuffs, intermediates, and pigments consigned to Phillip Ruxton. In due time, the vessel arrived in Baltimore harbor with the much needed supplies for one inkmaker. Needless to say, upon the entry of the United States into World War I, this traffic ceased.

Rotogravure came to America in 1904 but up until the outbreak of the war, most of the inks used in the process were imported from Europe. When supplies were cut off, the first gravure inks were made in America by Ault & Wiborg Company of New York, which later became the In-tag Company, now a division of the Interchemical Corporation.

Following the war, the chemical industry in America, which had been expanded to meet requirements

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of war, now turned its efforts to the requirements of the postwar world.

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It is still a debated point as to the exact date of the first appointment of a full-time chemist in the printing ink industry. Qualified chemists were employed in the making of dry colors and varnishes for the use of printing inkmakers and they had, in some cases, close association with the inkmakers. Probably between 1895 and 1905 there will be found the first chemist to be employed exclusively in the making of printing ink. Today, ink firms have well equipped laboratories with staffs of chemists engaged in testing and control work in the development of new inks.

A chemical change is defined as a change in the composition of matter. The composition of printing ink itself is mainly a physical mixture of oils or vehicles, pigments, and other ingredients which help the ink to function properly. Many new products of the chemical industry have been examined by ink chemists.

Linseed oil varnishes have been described as "God's gift to the inkmaker," since for many long years both letterpress and lithographic ink depended on them for satisfactory vehicles. Between the two World Wars, many new oils, both vegetable and mineral, found an increasing place in the business. World War II found America well provided for, insofar as pigment colorants were concerned, but vegetable oils were in extremely short supply, and many new products were developed to replace linseed oil. Recourse was made to some fish oils and a new oil developed called "Tall Oil" which came from the waste liquid of the paper mills. Mineral oils were greatly improved and when combined with some of the new synthetic resins, the horizons of printing ink vehicles were greatly extended. It is now said that in the foreseeable future linseed oil, as a vehicle of printing ink, may occupy a very minor place, thanks to chemistry.

But the ink chemist has been responsible for some specific as well as general major improvements. First among these was the development of "wax-set" inks. They are stable on the press but set instantly when submitted to a coating of wax. No great excitement greeted the advent of these inks, but they are most worthy of comment because they were the first inks to break away from traditional methods of drying by oxidation or evaporation. They were originally designed for the printing of breadwrappers, which go through a waxing bath after printing, but the wrapper industry did not take to them. The drying has since been termed as drying by "precipitation" or "selective absorption." However, a more important application of the principle was the development of the "moistureset" inks, by the Michigan Research Laboratories. "Moisture-set" inks set very quickly in the presence of moisture. They have been marketed under trade names. "Heat-set" letterpress inks were another important development, despite the fact that the principle of drying was evaporation. It took several years to develop special features required for their success. They had to be stable or nonvolatile on the press at room temperature and then evaporate quickly and

CHARLES R. CONQUERGOOD

In 1902, Charles R. Conquergood joined the Canadian Printing Ink Company Limited. By 1917 he was secretary-treasurer. In 1930 he became managing director, and by 1935 he was president and general manager—a business success that exemplifies his characteristics of leadership.

Further demonstration: Among his many clubs, he has headed the Printing Ink Makers' Association of Canada, the National Association of Printing Ink Makers, the Toronto Club of Printing House Craftsmen, the Canadian Manufacturers Association, both the Toronto branch and the Ontario division; the Kiwanis Club of Toronto, and the Empire Club of Toronto.

Deeply interested in education (he has six sons and one daughter), Conquergood belongs to the Royal Commission of Education for the Province of Ontario, has represented his ward on the Toronto Board of Education since 1938, was chairman of the Board



in 1942, and has served seven years as an appointee to its Advisory Vocational Committee.

His hobbies—which surely must be thrust aside frequently in the interest of such a busy agenda—are photography, spectator sports, and golf.

completely on the application of sufficient heat. "Heat-set" inks have found a prominent place in printing of large-edition work such as magazines. The smaller printers then demanded faster-drying inks for their work and this demand has been met fairly well by quick-setting letterpress inks using the principle of precipitation or selective absorption for drying. Important improvements have also been made in the speed of rotogravure by using an enclosed fountain on the press to prevent evaporation while running, and inks with faster-evaporating solvents for faster drying.

Another important addition to the letterpress field is the aniline press. This machine was originally of German design and uses a fluid type of ink, basically aniline dyes dissolved in alcohol, which evaporates rapidly. These inks, being transparent, did not meet all the needs of the bag industry, in which field the press has found its greatest use, so inkmakers developed the pigmented aniline press inks. These are mostly printing ink pigments ground into shellac or synthetic resin binders.

The number of special applications of printing inks today runs into the thousands, each with some special quality or attribute that makes it economically possible to print products that would otherwise be impossible to print.

Our lithographic readers may feel that they have been forgotten, but much of what has already been written applies, with equal weight, to their field.

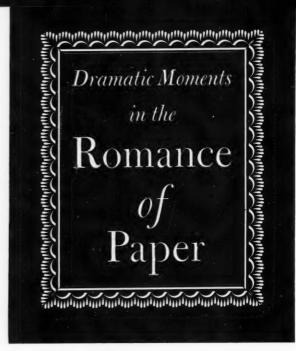
Education, art, commerce, and industry have all grown up with printing ink as the spark plug of new

knowledge. Perhaps for the reason that the ink industry was closely allied with art and more concerned with the ideas of service, rather than profit, or perhaps it was by reason of its small stature that it escaped, for so long, the attention of banking and finance. However, in 1929, a group of bankers, headed by Dillion Read and Company of New York, acquired the Ault and Wiborg Company, the Queen City Printing Ink Company, and Phillip Ruxton, Incorporated, and formed the International Printing Ink Company, the first printing ink company to have its stock listed on the New York Stock Exchange. This was followed, a year or two later, by the acquisition of six important companies to form the General Printing Ink Corporation. These events, however, were of interest from another viewpoint as well, for these two corporations, starting in the printing ink field, both expanded into larger organizations - The Interchemical Corporation and the Sun Chemical Corporation. In both cases, printing ink divisions are maintained as operating units.

Pure research is commonly considered the function of the Universities, but industrial research translates and markets the findings of scientific principles to meet the everyday needs of commerce. The first half of the twentieth century has seen some of the most phenomenal developments in the history of mankind. From chemistry, in the printing ink industry, the next logical step was to research. After the organization of the International Printing Ink Corporation, it was reported that the firm would embark on a research program by including in its budget a sum of \$75,000 annually to equip and operate the new department. In the years that followed, other companies made private plans for research or purchased research services from organizations outside the industry. In 1946, a group of members of the National Association of Printing Ink Makers formed a new unit known as the National Printing Ink Research Bureau. Headquarters were established at the Lehigh University in Bethlehem, Pennsylvania. In its short period of existence this organization is finding a key position of research in the graphic arts field.

As chemistry has brought many changes to the ink industry in the past half-century, so research may bring many changes in the next half-century.

The romance of printing ink lies in what might be described as its visible invisibility. When your eyes turn to a printed page, a colorful package, or other printed articles, you are conscious of color and form which conveys a message, an idea, an identification, a symbol, and this is the thing you see. The mark of printing ink becomes the printed message and while you are looking at the ink, you are not seeing it as such. Ink is like Cupid, who whispers love in your ear. You may be aware of love but not through the sense of vision. Printing ink is the stage-setting for the drama. It creates the atmosphere, but "the play's the thing." Printing ink is to the graphic arts what light, air, or water is to life-one of the essentials accepted without notice until scarcity or poor quality brings it to our conscious attention.



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By Harrison Elliott

"AMERICAN ARTS only want encouragement." The quotation is the legend which appeared on a paper mill label on ream packages of paper made in the mill of Thomas Amies. His contribution to the advancement of papermaking was a fine substantial handmade sheet in size somewhat larger than had been previously made for printing. The paper was of a high quality which made it a fitting and lasting vehicle for the printing of a limited edition of copies of the Declaration of Independence. The paper was priced at \$125 per ream in size 26 by 36 inches with a substance of 140 pounds to the ream.

Amies, before starting a mill of his own, was superintendent in the Willcox Ivy Mills at Chester, Pennsylvania. His plant was known as the Dove Paper Mills and was in Lower Merion, Montgomery County, Pennsylvania. The name of his mill and his dove watermark were appropriated without benefit of encouragement from the Willcox mill. There was a time in early papermaking history when the use of a purloined watermark was punishable by death.

The encouragement that papermaking has had in the United States has been due largely to the impetus given by the growth of the country, the spread of culture, and the expansion in the various uses of paper. Whether paper gave the impetus to the advancement of printing or the advance of printing technique led to the developments and improvements made in papermaking is a question. Of course paper appeared before printing in quantity was possible and was responsible for giving a vehicle for the world-wide circulation of the printed word. If, as it is said, printing is the mother of progress, surely paper should be considered its paternal parent.

Papermaking did not begin in this country until about fifty years after the first printing press was set up here. Pioneering in the paper industry here were such rugged individualists as William Rittenhouse who with three partners set up the first paper mill in

70

British North America at Germantown, Pennsylvania, in 1690; Henry Onderdonk in New York; Christopher Leffingwell in Connecticut; Daniel Henchman and the Burbanks in Massachusetts; Matthew Lyon in Vermont; and Samuel Waldo in Maine, and such papermaker-printers as William Bradford in Pennsylvania, New York, and New Jersey; and Isaiah Thomas in Massachusetts. All were men of prominence in their time and noted for their energy and industry.

Not the least of the early printers to lend aid to papermaking in this country was Benjamin Franklin, who lent encouragement to eighteen paper mills. He collected and sold them rags and bought generously

of their product.

Most dramatic moment in the history of papermaking since its origin in China before Christ was the invention of the papermaking machine, the idea of Nicolas Louis Robert, who worked in the paper mill of St. Leger Didot at Essones, France. Robert's idea was to make paper in a continuous web and so to increase the output over the slower method with the hand mold making one sheet at a time. Incidentally, it is said that to a large extent Robert was prompted by some labor difficulties they were having with the

handmade papermakers.

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Robert built a small hand-driven machine capable of making a sheet forty to fifty feet in length. The machine was patented in France in 1799. John Gamble, a brother-in-law of Didot, took the idea to England and patented it there. Arrangements were made with Henry and Sealey Fourdrinier, large stationers, to finance the development of the machine in England. Bryan Donkin, a practical mechanic, became connected with the venture, made improvements in the original design, and the improved machine was patented in 1807. The Fourdrinier brothers spent so much effort and money in perfecting the machine that they became bankrupt, and Robert, Didot, and Gamble were likewise ruined financially. But there remains one mark of distinction to the memory of the Fourdriniers—their type of machine still bears their name.

This revolutionary method of making paper was of too much value and importance to cease with the failure of the Fourdriniers. Bryan Donkin was the only one to emerge from the financial failure without a loss to himself. He pursued the manufacture of the paper machine with a determination which, with what had already been accomplished, enabled him to build up a

successful business in its manufacture.

In 1809, John Dickinson, an English papermaker with a mechanical turn of mind, devised and patented what is now known as the cylinder type of papermaking machine. The Gilpin paper mill on the Brandywine, near Wilmington, Delaware, erected in 1817, was the first paper machine to operate in this country. It was the cylinder type machine, operating on the same principle as that invented by Dickinson. It is somewhat of a mystery how Thomas Gilpin obtained the idea for his machine. But it was designed and operated so successfully that a practically flawless sheet of paper was made right from the beginning. It produced



HARRISON ELLIOTT has been in the paper business for many years and for more than a decade has been making paper by hand as a hobby. His making paper by the hand method started when the Eynsford Mill in England shipped to The Stevens-Nelson Paper Corporation, his employers, some small equipment to demonstrate the making of paper by hand and to further the interest in handmade paper in this country. After the equipment had served its original purpose, he discovered on experimenting with it, and after a certain amount of practice, that he could make a practical sheet of paper. All sorts of cotton and linen rags were used, preferably new material. The equipment

was rounded out so that the entire process was possible from the raw material through to a finished sheet.

While Elliott does not consider his efforts of great importance commercially, it is, nevertheless, to him a source of satisfaction to know that he can produce a useful and salable product, even if small in quantity. His paper has been used for very limited editions of books, for keepsakes, for broadsides, for greeting cards, and in hand binding of fine books. He has written much in the way of paper advertising, articles on the subject of papermaking, has given numerous talks and demonstrations of papermaking, and over a long period has collected paperiana.

the first paper manufactured here in a continuous web. It turned out a sheet thirty inches wide at the rate of sixty feet a minute. The machine was attended by two men and a boy, and effected a saving of \$6,000 to \$12,000 a year in wages, no small item in those days.

The first Fourdrinier type of machine to be set up in America was built in England by Bryan Donkin and imported by Henry Barclay. It was installed in the mill of Beach, Hommerken and Kearney at Saugerties, New York. This machine produced a sheet sixty inches in width and of an indefinite length. The senior member of the paper mill firm was Moses Y. Beach, later the owner and publisher of the New York Sun.

The first Fourdrinier machine to be constructed in this country was built in shop of Phelps and Spafford, now the Smith and Winchester Manufacturing Company, in South Windham, Connecticut, in 1829. It was a fine example of the ingenuity and mechanical genius of Charles Smith, a young man only nineteen. This machine was so well made that it produced paper more than a century. The machine was installed in the paper mill of Amos H. Hubbard at Norwich Falls, Connecticut. This plant was erected in 1766 by Christopher Leffingwell and was the first paper mill to operate in Connecticut.

The modern papermaking machine has become a marvel of precise mechanism capable of producing a practically flawless and uniform product in huge quantity at higher and higher speeds, to meet the demands of the modern high-speed and precision print-

ing press.

Considering the vast extent of present activities in the manufacture of wood pulp, it seems incredible that what is now such an important phase of the industry should have had such a lowly and slow beginning. Many small but significant experiments were made in the latter part of the eighteenth century. In an essay on wasps written in 1719 by Reaumur, the French scientist, attention of the papermakers was directed to the fact that the wasps make a kind of paper of wood fiber. In his later treatise dated 1742, Reaumur bemoaned the fact that neither he nor anybody else had acted upon the suggestion. He declared that if such new papermaking material could be employed, the papermaker would be amply repaid for his efforts.

It was not until 1840 that Friederich Gottlob Keller, a German, developed and patented a grinder with a revolving grindstone for the making of groundwood pulp. In 1846 Heinrich Voelter purchased the Keller patent and put groundwood paper on a commercial basis in Germany. (During the interval between 1719 and 1840, Matthias Koops of London, in 1800, made what he claimed was the first practical papers to be made from wood, straw, and reclaimed paper. He had books printed on papers made from these different materials. But the English papermakers were indifferent and Koop's mill went into bankrupcty.) It remained for the Germans to commercialize the making of paper from groundwood, a material which was much needed to overcome the ever-growing rag shortage and one which soon superseded rags as a raw material for papermaking.

Less heralded, and contemporaneous with the work of Keller, was that of Charles Fenerty, a young Nova Scotian, who produced groundwood pulp and had paper made of it at Halifax in 1841. Fenerty's paper was the outcome of experiments begun in 1839. He seems to have been a prophet without honor in his own country. A Halifax newspaper did at the time give Fenerty a measure of credit, commended his efforts, and made an appeal for his support on patriotic grounds. Fenerty did most of his work between the ages of sixteen and nineteen. Perhaps the fact that he was somewhat of a poet and given to writing verse made him appear as a dreamer.

Not until 1867 was the groundwood process introduced in this country. Through the efforts of the Pagenstecher brothers, Albrecht, Alberto, and Rudolph, and Steinway of piano fame, two Voelter woodpulp grinders were imported from Germany and set

up and operated at Curtisville, near Stockbridge, Massachusetts. These grinders produced the first groundwood pulp made in the United States. The first sale of this pulp was made to the Smith Paper Company of Lee, Massachusetts, a nearby paper mill, under the management of Wellington Smith, where paper was made from the pulp. Thus paper made from mechanically prepared wood pulp was introduced as a commodity in this country.

At first there was a strong prejudice on the part of the newspapers against newsprint made from groundwood. It was considered "shoddy" and an inferior sort of paper. But the foresight of the Pagenstechers, the activities of Warner Miller, and the initiative of Wellington Smith prevailed over this prejudice. Newsprint made of groundwood made possible a cheaper newsprint, a more abundant raw material to feed faster-running paper machines with their enormous output to supply the presses of the modern newspapers. Groundwood paper found many other outlets and built up an enormous branch of the industry.

Concurrently with the development of the groundwood process were the chemical processes for the segregating of the cellulose fiber in wood by eliminating the nonfibrous substances. These processes rendered a purified wood fiber with more lasting qualities than that of groundwood pulp containing lignin. In 1851 Hugh Burgess and Charles Watt made pulp by the soda method in a mill in England. Later, in 1854, Watt and Burgess secured an American patent covering their soda process and set up a manufactory at Gray's Ferry on the Schuylkill near Philadelphia. The soda process brought about more plentiful paper at lower cost for the printing of books.

Benjamin C. Tilghman is generally credited with being the originator of the sulphite process, the result of experiments begun in Paris in 1857. In 1867 at Manayunk, near Philadelphia, Tilghman made a suitable wood-pulp paper by the sulphite process. However, he played the usual role of a poor inventor. After spending much time and money, he was forced to abandon the project owing to a lack of wherewith to carry it further. About three years later Fry and Eckman, working in Sweden, improved the process and made it of practical use after experimenting with it secretly until about 1879, finally perfecting it in

England in 1884.

The first use of the sulphite process in this country was made by Charles S.Wheelwright, of Providence, Rhode Island. After seeing it working successfully in Sweden, he and some associates erected a mill known as the Richmond Paper Company, at Greenwood Point, East Providence. Pulp of a good grade was produced, but difficulties arose and the process as used here was not commercially profitable, resulting in financial failure. However, other mills took it up and succeeded in putting it on a profitable and permanent basis. By 1866 the rag rooms in many paper mills were dispensed with, and chemically prepared wood pulp was used in conjunction with groundwood pulp in the making of newsprint and other papers. Wood

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st Inland Printer "Oscar" award — cast bronze testimonial plaque of Benjamin inklin. Perry R. Long, who was awarded the plaque last year, will make the presenta-n, at International convention, of a plaque to most Outstanding Craftsmen of 1950

helped to conserve the rag supply for those high-grade papers which must possess the essentials of durability and permanency to the highest degree.

The first noteworthy and most dramatic use of coated paper occurred in 1875 when the printer Theodore L. De Vinne used coated paper for the illustrations in a catalog. De Vinne then persuaded the S. D. Warren Company of Boston to produce a paper coated on both sides with an "artificial chalk" surface to give the paper a smoother printing surface than had been hitherto possible. This was called "fine cut" paper. The Century Magazine for December, 1887, contains one four-page and three sixteen-page inserts of wood engravings printed on what is now known as "coated paper." The appearance of these illustrations is greatly improved when compared with the wood-cut illustrations printed on ordinary paper in the advertising section of the magazine.

Much improvement has been made in coated and enameled papers, especially for fine halftone printing of realistic illustrations in color. Objection has been made to the high gloss the paper possesses, owing to the strain it inflicts on the eyes of the reader. To overcome the glare there has been produced a dull-coated stock

which does not reflect the light. Illustrations printed on dull-coated paper have a desirable depth and richness of color.

Kraft paper, a product of Swedish origin, resulted from the discovery of the sulphate process by Carl F. Dahl in 1879, and patented by him in 1884. It was later hailed as the wrapping paper of the future, a prophecy which has been fulfilled to a greater extent than expected. The Brompton Pulp and Paper Company, East Angus, Canada, was first to use the sulphate process to make kraft paper in America in 1907. Two years later kraft was produced in the United States. Tremendous advance has been made in developing the quality and output of kraft, particularly in the South. The tendency has been toward lighter weights in wrapping, which has effected a saving in wood.

In the field of packaging, the displacing of wooden containers by those of weatherproof paperboard effected a great saving in weight and expense. This was achieved by coatings of adhesives and impregnants to contribute properties not inherent in the paper to make it capable of withstanding rough handling, water penetration, humidity, and the attacks of insects. Within cartons so treated, articles had to be wrapped in special papers affording protection for frozen and dehydrated foods. The need was also met for a wrapping paper to protect fine metal instruments against rust and corrosion. These developments in wrapping and packaging brought into prominence the packaging engineer and greatly extended the use of paper,

necessity.

Another dramatic moment occurred in 1911 at Orange, Texas, when E. H. Mayo made kraft paper by the sulphate process, using pines of the forests of the South. His efforts seem to have preceded the experiments of Dr. Charles H. Herty at Savannah, Georgia, to prove that, regardless of its resin content, paper could be made from pine grown in the South. It is largely thanks to the efforts of Herty that the paper industry grew in the South. It gave to the South a much-needed new industry and a large measure of prosperity.

making it more and more an indispensable wartime

On January 17, 1940, the first commercial run of newsprint made from Southern pine was produced in the Southland Paper Mills, Lufkin, Texas. This resulted in further expansion of the new paper industry in the South. But it took many trial runs before the quality was improved sufficiently to make a good grade

A latter-day development in thin papers has been that of "bible paper" made directly from flax. This type of paper was made originally from linen. It is a uniformly thin sheet, comparatively sturdy, with a high degree of opacity, and low in bulk. The bible paper now made here resembles very much the socalled India paper, and has practically all its virtues. The original India paper was introduced in England in 1841. The paper did not come from India nor did it originate there, but came from China where it was made from bamboo. In 1875, a good imitation of India

paper, and what passes for it today, was made in the Wolvercote Mill for the Oxford University Press. The mill became the source of supply for the printing of the Oxford Bibles, and the formula for making the Oxford Bible paper was a secret carefully guarded.

The production of wet-strength or moisture-resisting paper efficiently answered a wartime requirement. The physical properties necessary called for a paper possessing a maximum of strength when wet. This peculiar quality was essential to furnish a substantial vehicle for the printing of war maps, manuals of instruction, and other printed matter subjected to exposure to the elements. It was imperative that the paper resist disintegration by contact with water and the wear and tear of rough usage.

Wet-strength papers were produced by treating the cellulose fiber with insoluble resins such as melamine-formaldehyde or urea-formaldehyde applied in the beater. When the insoluble resins mixed with the fibers in the beater, it attached itself to them uniformly and formed a water-resisting bonding of the fibers in

the finished papers.

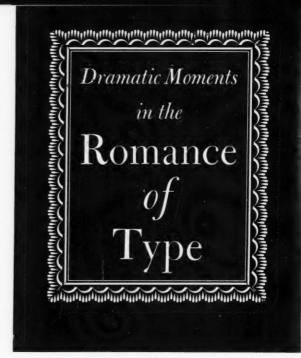
What the papermaker seeks today is not the discovery of a new and more plentiful raw material, welcome as it would be. That field has been thoroughly explored. It is more a matter of extending the use of the abundant and low-cost materials now available, and by chemical research and technical ingenuity better the product obtained from such materials. The papermaker may tell you that papermaking is not an exact science, but the craft is a most exacting one. Given the same materials and a like equipment, the product of one mill may differ from another. Therein may be seen what imparts a competitive impetus to papermaking, and upon those differences depends much of the life of the industry aside from the increasing demand for its products.

Ask the Man Who Pays for the Paper . . .

Kimberly-Clark Corporation recently questioned 161 buyers of printing on what paper features they are interested in. Here's a digest of their answers:

"There are two types of buyers and hence two types of printers. There are large buyers who spend over \$100,000 annually on printing and paper, and although they are the fewest in number, they buy most of the nation's printing and paper. These men and the printers they deal with want to know most about the individual characteristics of coated paper. And the more they know about paper, the less they are interested in hearing about the finished results obtainable on that paper. They want details, and the most important characteristic to these big buyers is—not brightness, not printability, not bulk—but foldability! Opacity is second, tint is third; brightness is eighth.

"Buyers with a budget less than \$100,000 judge paper primarily on the finished printed results—not plain samples. The second feature they seek is *feel*, then *printability*, then *foldability*. Bulk and brightness rank last."—*Sales Review*



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By Richard N. McArthur

This is not a chronology of type development nor an appraisal of type values. Time and space allow only for projecting selected dramatic moments in this more-than-five-centuries-long romance of type.

With all their search and research none of the historians of type admits that the many-centuries-earlier wood block printing of the Orientals led to the origination of type as we know it. A Korean book in the British Museum, said to have been printed from movable type in 1338, was not known in Europe until the nineteenth century. Wood block printing came into use in Europe in the fourteenth century, and was common in the early half of the fifteenth; the first known to bear a date being that of 1423, with two lines of black-letter and the figure of Saint Christopher, the child Jesus on his shoulder, fording a stream.

English, American, and Dutch writers upon type history and lore generally acknowledge Coster of Haarlem as first to make movable type; but crude,

probably cast in moulds of sand or clay.

Because of the disputation as to the inventor, this must at least begin as a romance, and the opening dramatic "moment" will be set as the year when Gutenberg is claimed to have begun his experiments with punch, matrix, mould, and casting of metal types. We accept the year universally observed in 1940 as the five hundredth anniversary of the invention of printing from movable type.

Gutenberg's type was in imitation of the German book hand: pointed Gothic black-letter (not at all like the type called "gothic" in America in the nineteenth century, and "grotesque" in Europe, which we now designate as sans-serif along with the moderns of this category). Flemish Black, Cloister Black, and Goudy Text are present-day examples of type of the

Gutenberg character.

Gutenberg and his associates, Fust and Schoeffer, printed two editions of the Bible, known as 42-line

74

and 36-line (84 or 72 double-column lines to the page). Rubrication and ornamentation were by hand in the same manner as manuscript books, with initials, bands and borders in gold, red, blue, and green, and at first sold as of manuscript production, printing being kept a secret. Of the 42-line Bible forty-four on paper and eighteen on parchment have been recorded by Schwenke; of the 36-line only twelve copies are known, all on paper. The present value of each is estimated as \$200,000, or more. A few book dealers offer single leaves for sale; a plain one of paper was offered two years ago for \$450.

Type had a beautiful beginning. How many types since Gutenberg's have attained deserved high fame in the romantic drama of the characters cast in the alloy of lead, tin, and antimony? The more important of them—and something about the designers whose craftsmanship brought them into bloom—are from here onward related of in the text following the oversize bold figures denoting the year, the dramatic moment of their entry in the parade.

The first roman type was cast and printed by Sweynheym and Pannartz at Subiaco, a Benedictine monastery near Rome. These two printers came from Germany with their type-casting outfit and hand press on horseback. The first type cut and printed at Subiaco is usually called a half-roman, as it shows considerable weight and angularity characteristic of the German black-letter text, though intended to follow the Humanistic roman hand of that glorious era of the letter's development.

1469 The first type of the true roman tradition was cut, cast, and printed by Johann and Wendelin de Spira, and marked the beginning of type use at Venice, which city became the center of fifteenth century printing. By the end of that century there were a hundred and fifty printing houses at

the great Italian city.

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Nicolas Jenson, a Frenchman, most famed of the Venetian printers, cast and printed the type best esteemed as the model roman of the incunabula. Founded on the Humanistic hand, in pages of Eusebius evenly spaced and clearly printed, it has been the inspiration of many types cut more than four hundred years after: the Golden of William Morris (copied by United States foundries and named Jenson-but neither the Morris interpretation nor the United States foundry versions were like the real Jenson in design characteristics or weight); the Doves type of Cobden-Sanderson and Emery Walker; Cloister Oldstyle by Benton of American Type Founders Company, also cut by Linotype; Centaur by Bruce Rogers for Monotype; Eusebius by Ernst F. Detterer for Ludlow; Eusebius Bold and Open romans by R. Hunter Middleton for Ludlow. Jenson left his punches to his brother, never to be used. William Morris followed suit and left his to the British Museum. The Doves matrices were scattered on the bed of the River Thames. The first italic did not appear until thirty-one years after the original Jenson. Italics are made to match Cloister Oldstyle

RICHARD N. McARTHUR

To borrow a bit from "Who Knows - and What" - Richard N. McArthur is a printer, typographer, book and type designer, calligrapher, writer, expert on type faces, half-owner of Higgins-McArthur in Atlanta, instructor in the journalism school at Emory University. He introduced these advertising faces: Cooper faces, Ransom's Parsons faces, Trenholm faces, Munder faces; designed McArthur's Old Dutch decorative capitals and italic for Hart Schaffner & Marx advertising; he was author-designer of the Specimen Book of Barnhart Brothers & Spindler Type Foundry, of which he was advertising manager from 1916 to 1925. At B.B.&S., he became acquainted with Oz Cooper and his work, which enabled McArthur to make a notable contribution to material for the memorial volume about Cooper recently published by the S.T.A.



McArthur collects type specimen books, both United States and foreign, and has visited most of the type foundries, printing museums, and other typographic shrines both here and abroad. Type lore is his hobby.

and Eusebius, and Frederic Warde designed for Monotype the italic named Arrighi for use with Centaur, this italic said to be modeled on the calligraphic cursive of the sixteenth century Italian scribe.

1476 Distinguished printing with Gothic black-letter, roman, and greek types by Erhard Ratdolt began to be issued at Venice. Ratdolt was the first to use decorated title pages. He also used hand-some borders and initials. He printed the first speci-

men sheet of type in 1486.

William Caxton, England's first printer, set up his first press at Bruges, Belgium, to print his own translation of the Recuyell of the Historyes of Troye, the first book printed in English. Removing his press to Westminster in 1476, he proceeded to issue the first book printed in England, The Dictes or Sayengis of the Philosophres. His type was ugly and the spelling awful for twentieth century reading. The illegible black-letter was of the Flemish batarde (bastard) order. The layman of our time who thinks "Old English" is difficult to read as text would be hopelessly lost trying to decipher the crude Caxton print and strange words. But the English lexicon was like that five hundred years ago, and we have type, simplified, plainly printed, to thank for bringing us out of the maze. Be it said to Caxton's credit, he improved with experience.

The first italic was cut for Aldus Manutius, the Venetian printer, successor to Jenson, and used in small size books introduced and made popular by the originative Aldine Press. The italic minuscules

were adapted from the cursive writing of that time, and were used with small roman capitals. Slanted italic capitals, first made at Lyons, were not adopted in the Aldine typography until about 1560. The roman of Aldus in the Bembo of 1499 and Poliphilus *Hypnerotomachi* of 1499 influenced Tory, Garamond, and others of the sixteenth century and have been revived in our time.

Italics of greater distinction and formality, says Stanley Morison, were in the cursive of Ludovico degli Arrighi, named Vicentino after his birthplace, Vicenza. In 1522 his first book was issued showing the Chancery letter, littera da brevi (for papal briefs). His La Operina followed a year later. Arrighi's first font was secured by Janiculo at Vicenza, and his second by Blado at Rome. The sixteenth century italics, influenced by writing hands, soon showed swash capitals, which were made for romans as well.

The Arrighi chancery is the favored model for the present-day revival of calligraphic lettering led by Edward F. Johnston and Alfred Fairbank in England, and by Ernst F. Detterer, Raymond F. DaBoll, Paul Standard, Oscar Ogg in America—and a few more who have seen the sun of calligraphy come up thundering out of the long night. Its broad-pen aspect is seen in the better-class advertising and book jacket lettering and in the newer advertising types.

1530 In France Claude Garamond became a type founder as a result of strikes which forced the separation of type cutting and casting from the craft of printing. His light, graceful, and mildly contrasting romans and italics became the fashion throughout Europe. His is generally credited as the first of the Old Face style that later influenced the Dutch typemakers who supplied the English printers, and which Updike says "lives in William Caslon's so-called 'old face.'"

In 1914 Morris Fuller Benton of A. T. F., in collaboration with Thomas M. Cleland, began cutting a Garamond roman, and in 1918 the matching italic. This was undoubtedly the most important revival of an old face, next to Caslon. The first Garamond Bold is shown in the 1923 specimen book of the American Type Founders Company.

All of the machines have excellent cuttings of the Garamonds: Lanston, Ludlow, Linotype, Intertype. Goudy's version, designed for Monotype, is spelled with a t, Garamont. Garamond typophiles were shocked by an article in the 1926 Fleuron in which Paul Beaujon pretty well proves that the caracteres de l'Universite of the French government printing office, Imprimerie Nationale, attributed to Garamond, were actually cut by Jean Jannon-and this is the face on which all of the United States-and European, toorevivals are based. The same article disclosed that the face called Granjon (revived by George W. Jones for Linotype) is after a type actually cut by Garamond! Such confusion! But what's in a name? Garamond type by any name is just as good; likewise Granjon. Ludlow's Garamond came later and Middleton designed it after a true Garamond.

1574 An excellent roman and italic which had been cut, cast, and printed by John Day, at London, was called "superior to almost any other" of the period. Day was one of the first English printers to cast roman and italic on bodies which aligned one with the other.

The Oxford Press began and has been active to this time. Between 1667 and 1672 the press was presented some fine types from Holland by Dr. John Fell. Revived in 1877 by the Daniel Press of Oxford, these types that lay dormant so many years have proved their usefulness in many handsome works by modern English presses. When Frederic W. Goudy set out to design Kennerley in 1911, he said at first he modeled his drawings on the Fell roman and italic, but soon found his freehand working away from his exemplar and pursuing a line of his own. He says "I went back over the letters already drawn and brought them into harmony as to details with those that followed more completely my own conception of a new face." A specimen of the Fell types will be issued, probably this year, according to a letter from Charles Batey, Printer to Oxford University. The Oxford Press owns a valuable collection of original punches and matrices, some attributed by Stanley Morison to Garamond and Granjon; and a Greek cut by Baskerville.

1638 First use of type in the English Colonies of North America at Cambridge, Massachusetts. Stephen Daye was the printer; The Freeman's Oath and The Bay Psalm Book the first items printed. Eleven priceless copies of this "Whole Book of Psalms" are known to exist.

At about this period in the evolution of type, capitals J and U came into use. In early times capitals J and U did not exist. Until the seventeenth century the letter I stood for the vowel sound of I and the consonant sound of J. The curve of j was added to mark the distinction, but the dot of the i survived in the lowercase. Architects affecting the classical still use capital V instead of U.

1720 William Caslon began as a type maker at London, his first specimen sheet printed in 1734. His type soon outsold the Dutch. His roman and italic, now known as Caslon Old Style or Old Face, became the favorites in the American colonies. The face was first named Caslon by Henry L. Bullen in the 1895 Collective Specimen Book of American Type Founders Company. In 1896 Albert, Sydney, and Harold Smith, whose father had become sole owner of the Caslon Foundry, legally added the name Caslon as a prefix and subsequently changed their name to Caslon. Today Ralph Sydney Caslon is known as "The Last of the Caslons."

1744 Benjamin Franklin's handsomest example of printing, says Bruce Rogers, the book *Cato Major*, was published. At this period Franklin was acting out a lifelong series of dramatic moments, which, to read of them now, seem the most romantic in the five hundred and ten years of type lore. Boston, Philadelphia, London, Paris, back to Philadelphia.

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COMPOSING ROOM

HERE METAL STAMPS CALLED TYPES

ARE ASSEMBLED BY SKILFUL HANDS

INTO THE MASTER-PATTERNS

FROM WHICH THE VISIBLE WORD IS MULTIPLIED

FIVE CENTURIES AGO
THE INVENTION OF MOVABLE TYPE
OPENED A NEW EPOCH IN HUMAN HISTORY
BY RELEASING THE COMMON PEOPLE
FROM THE THRALDOM OF ILLITERACY

AND SETTING THEIR FEET UPON THE ROAD

TO SELF-GOVERNMENT

YOU WHO TRAVEL THAT HIGH ROAD
TOUCH NOT WITHOUT REVERENCE
THESE LEADEN SYMBOLS OF YOUR FREEDOM
REMEMBER YOUR INCALCULABLE DEBT
TO THE COMPOSITOR

WHOSE PATIENT, NIMBLE FINGERS BUILT FOR YOU LETTER UPON LETTER

A THOUSAND STAIRWAYS TO THE STARS



Handiwork of Richard N. McArthur—worthy treatment of noble words by Beatrice Warde of Monotype Corporation Limited, London—shows his gifts as typographer, designer, and calligrapher.

On June 4 at Boston the indenture was signed for the apprenticeship of Isaiah Thomas, age seven. It read: "His said master and mistress, well and faithfully he shall serve; their secrets he shall keep close; their commandments he shall gladly obey; he shall do no damage to his said master or suffer it to be done by others without giving seasonable notice thereof to his said master; he shall not waste the goods of his said master, nor lend them unlawfully; at cards, dice, or any other unlawful game he shall not play; fornication he shall not commit, matrimony during the said term he shall not contract; taverns, alehouses, or place of gaming he shall not haunt or frequent; from the service of his said master by day or night he shall not absent himself." In Isaiah Thomas by Clifford K. Shipton, the apprentice is shown to have become the father of modern printing and publishing in America. The record of his exemplary success through intelligent application of type is preserved in the library of the American Antiquarian Society at Worcester, Massachusetts, which Thomas founded.

1757 The first appearance of the type of John Baskerville at Birmingham, which went forth in an edition of Virgil "to astonish all the librarians of Europe." Baskerville also invented hot-pressed,

satin-smooth paper, and his black ink set a new standard of blackness. Considered a transitional style, between old face and modern, his type greatly influenced Bodoni and Didot who developed the modern letter in Italy and France. Baskerville roman and italic were revived in America by American Type Founders Company in 1915, and Monotype, Intertype, and Linotype cut their own interpretations of the face, which has become a favorite in United States bookwork. The Stempel Foundry of Frankfurt offers excellent Baskervilles, with bold and openface.

In this sixty-fourth year of the eighteenth century occurred one of the momentous events in the record of type. It was the publication at Paris of the Manuel Typographique by Pierre Simon Fournier le jeune (the junior, or younger). It was a beautiful specimen book of the Fournier type foundry, which had purchased le Be's establishment in 1730 and thereby came into possession of many punches and matrices of Garamond, Granjon, and other treasures by old masters of French type design. The famous typographic ornaments, which the French call vignettes and fleurons, were charmingly arranged, and variously and extensively displayed in the Manuel, and have bedazzled the typographic playboys ever since. The piece de resistance of the Manuel was the introduction of the point system of type bodies invented by Fournier which was destined to change type bodies throughout the type-using world. In the Manuel, Fournier says that only the artisan who has mastered the arts of engraving types, their casting and printing, can truly be called typographer!

1775 About this year Didot types were brought out. It was Francois Didot who perfected the point system of type bodies originated by Fournier. It became standard throughout Europe. Their point is not the same as the American, and the type bodies are slightly taller. European types sold for use in America are either milled down at the foot to American height or especially cast in molds that have

been made to our standard. Assuredly it was a most dramatic moment when the Declaration of Independence was set and printed. Not finding the facts in bibliography at hand, we appealed to type designer Sol Hess, who lives in Philadelphia, and he quoted from Fashions in American Typography by Edmund G. Gress: "When the Continental Congress adopted the Declaration of Independence, July 4, 1776, the secretary, Charles Thomson, sent the manuscript copy over to High Street, where John Dunlap had his printing office. The Declaration was probably put into type that evening and copies delivered to Congress the next morning. One of the broadsides is tipped in the minute book of the Congress, preserved in the Congressional Library (at Washington). The broadside measures about 13 by 20 inches. It was set in Caslon type."

(Because of the excellence of the material offered in this article, it has not been shortened to fit space allotted but will be concluded in the September issue of The Inland Printer.)

Merchants Not Liable for Printers' Errors in Prices

By ALBERT WOODRUFF GRAY

● THE PRINTER of a newspaper in Atlanta, Georgia, made a mistake. Advertising copy had been received for publication the following day. "Special in Furs. Large animal scarfs, taupe, brown, and black, satin lined with brush. For three days only. Special Price \$15." When the advertisement appeared it carried a price of \$5, not the \$15 named in the copy.

The advertiser, not very well acquainted with the law relating to the obligations assumed either by the printer or the advertiser in the publication of sales prices, felt that he was bound to sell at the advertised price. So, after disposing of forty-eight of the scarfs at \$5 each, he sued the publisher for \$480, the loss that was the consequence of this error. He failed to recover.

Last year in Mississippi a merchant gave the *Meridian Star* copy for two advertisements. The first, to be run on December 15, was "Kay's Pre-Christmas Clearance of Coats, Dresses. Twenty-five per cent off. Fur coats included. Your Opportunity for Real Savings."

The other advertisement was scheduled for the day following Christmas: "Kay's Clearance Sale. Entire Stock of Fall and Winter Coats, Suits, Dresses, one-half off. Your opportunity for real savings."

Here occurred another error. The advertisement scheduled for the day following Christmas was run on the fifteenth, ten days before the holiday. From the fifteenth until Christmas the store was thronged with buyers. The owner, guided by the same misapprehension as the Georgia merchant and faithful to the advertised price, sold his goods "one-holf off"

The holiday over, he turned to the printer for a refund of his loss, the difference between "one-half off" and "twenty-five per cent off" on the copy scheduled for the fifteenth. Failing to receive the refund to which he felt entitled, he too sued and lost.

The printer in both of these instances had incurred no liability other than a possible refund of the price paid for advertising space.

Some time after the erroneous advertisement of the \$5 price instead

of \$15 in that Georgia newspaper, a somewhat similar situation arose in Brooklyn, New York. An advertisement of a department store of that city was carried by one of the New York dailies. The store would sell, deliver, and install for anyone who would purchase and pay for the same certain "well known standard radios at 25 per cent to 50 per cent reduction" from the advertised list price. This was followed by a list of the various makes of radios available for the selection of the customer.

The following day a customer offered to buy two radios of those listed in the advertisement at the price published and the store, apparently better acquainted with this principle of law than the stores in Georgia and Mississippi, refused to sell

Two days later the customer returned with a certified check and again the store refused to sell. The man sued and he too lost. The determination of the New York court in favor of the department store followed the decision of the Georgia court holding that irrespective of the advertised price, there was no legal obligation on the part of the department store to sell at that price. By that same reasoning the Court of Appeals in Georgia pointed out that when there was no compulsion on the fur merchant in that state to sell at the advertised price, there could not be a liability on the part of the printer for what was legally a gra-

of P.I.A.

Printing Industry of America will share a large booth with the Graphic Arts Association of Illinois at the Sixth Educational Graphic Arts Exposition. (The Graphic Arts Association of Illinois, local affiliate of P.I.A., will be host to the P.I.A. convention at the Palmer House.) The booth, it is announced, will be comfortably furnished with lounge chairs for pediatric relief of those who acquire "exhibition feet" during their exhibit tours. The booth will also provide a quiet spot for those who wish to talk shop with fellow printers.

tuitous contribution by the merchant to his customers.

The freedom of the printer for any liability for loss arising from the mistakes in the price set out in the advertisement extends with equal force to the printing of catalogues and price lists.

A few years ago in Dayton, Ohio, the Elder & Johnston Company advertised in a Dayton Shopping Shopping News, "Thursday-Only Special, an all-electric sewing machine for \$26." The usual price for the machine was \$175. A woman went to the store of the advertiser, offered \$26, and asked for her sewing machine. The company refused to sell. She sued the firm for \$149, the difference between the advertised and the market price. She lost the decision.

The difficulty a person meets in attempting to insist on advertised prices in every one of these instances arose from the assumption that the price named in the advertisement was an offer that on acceptance became a binding obligation of the merchant to sell. To be an offer of that character, the offer must be definite and not be characterized by the indefinite uncertainty of a mere sales advertisement.

"The department store advertisement," said the New York court in the case against the Brooklyn store, "was nothing but an invitation to enter into negotiations and is not an offer which may be turned into a contract by a person by signifying an intention to purchase some of the articles mentioned in the ad." t

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As charged by the Mississippi court, the law is: "The advertisement did not constitute or effect a binding obligation on the part of the department store to sell such goods at the sales price as stated in the advertisement; and accordingly, if the store elected to go head and hold a sale at the price stated in such advertisement then the printer is not liable for damages, if any, suffered by the store as a result."

The rule has been stated even more clearly by an outstanding legal authority who says that business advertisements, published in newspapers and circulars sent out by mail or distributed by hand, which state that the advertiser has a certain quantity or quality of goods which he wants to dispose of at certain prices, are not offers which become contracts as soon as any person to whose notice they may come signifies his acceptance.

They are merely invitations to all persons who may read them that the advertiser is ready to receive offers for the goods at the price stated.

Pacific Society of Printing House Craftsmen Holds Twenty-fifth Annual Conference

•ALLISON W. MANNERS, Los Angeles, was elected president of the Pacific Society of Printing House Craftsmen at the closing session of the group's twenty-fifth annual conference held in Portland, Oregon, July 21-22.

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Other officers named were Thomas H. Hislop, San Francisco, the first vice-president; Allan M. Clark, Vancouver, B. C., second vice-president; Ralph Paulson, Boise, Idaho, third vice-president; and Isadore Margolin, Los Angeles, secretary-treasurer.

On the opening day of the conference, about 450 industry men heard Gordon J. Holmquist, manager of Cole-Holmquist, Incorporated, of Los Angeles, call for greater emphasis on human factors within the field.

"All our efforts toward technical gains have overshadowed those we aimed at improving employe relations," he said. "Since 1919 we have devoted time to improving production with new chemicals and mechanical processes and less attention has been given to human factors."

The man on the job isn't any good unless he actually has a desire to do that job, Holmquist stressed. "We must give him pride in his job and an inner urge to excel. We propose to do more in the future for better relations-and that will mean a better industry."

An afternoon typographic clinic featured three speakers. Amadeo By Naomi M. Disney

Tommasini, superintendent of the University of California Press at Berkeley, envisioned a trend back to basic principles in printing.

"Type that is functional, clean, simple, and usable, but still beautiful, is coming back into its own. In recent years type has been growing more costly and intricate," Tommasini said.

Jackson Burke, the Mergenthaler Linotype Company, Brooklyn, New York, had the topic "Fifty Years of Type Development." Ralph Paulson, Boise, Idaho, plant foreman, talked about composing room work.

Presiding officer of the session was Allen Clark; and Paul O. Giesey, Portland typographer, served as the moderator.

General tone of the photo offset clinic held July 22, was that letterpress work must become better and more efficient to meet the serious challenge being offered by offset. Presiding officer of this lively debate was Tom Hislop, who completed his term as second vice-president of the Pacific Society. Moderator was Urie Jumonville, Jumonville Lithograph Corporation, Portland, who pointed out various employer problems.

The contact screen is going to put the glass screen out of business, in the opinion of Charles C. Ball, Portland, who spoke on camera and platemaking techniques. Efficiency in platemaking, he pointed out, depends in part upon co-operation between artist and office to facilitate smooth operation in camera work. He also suggested organization of each job before it is started, for greater speed and efficiency.

Grain in a plate has two purposes, explained Herman Rothfelder, Portland, during a talk on offset pressroom procedure. The first, he said, is to provide a surface for coating to adhere to and the second is to serve as a reservoir for necessary water.

When dealing with a number of plates at one time, he advised marking the plates for simplification. For better register when following colors, he recommended placing the cut so that the grain runs the long way of the sheet.

"You'll be pleased with your results when you use a heavier stock," he said. "Also remember that the squared stock will give you a better register."

He stressed the importance of advising the inkmaker as to the type of stock to be used, and checking with him regarding the fastest and slowest drying varnishes.

Under the general heading of "press tips," Rothfelder offered the following suggestions: Keep presses cleaned and well oiled-it's cheaper



Gordon Holmquist with new officers of the Pacific Society of Printing House Craftsmen. Standing, from left: Mr. Holmquist, Allison W. Manners, president; Thomas H. Hislop, Allan M. Clark, Ralph Paulson, first, second, and third vice-presidents; and Isadore Margolin, secretary-treasurer

than repairs; check presses during any free minutes; give blankets a rest by changing them; don't forget that the water fountain is the heart of the press. The less water used, the better the job; set rollers in degrees of tightness; vary press speed with different jobs.

The rising star of offset, which prints on such materials as rubber, wool, and plastics, was credited to its wide adaptability to various jobs, said Al W. Johnston, Printing Division, Electric Boat Company, San Francisco branch.

The manufacture of photo offset equipment, interrupted by World War II, is now going strong, Johnston said, and, thanks to research, "we now have better paper, ink, rollers, and platemaking." Improvements include "better distribution of ink due to size and arrangement, streamlined presses for safety, practicability, and beauty, and more readily accessible controls."

"With the new machines multicolor work need go through the presses only one time," he declared. "The web offset presses have been pepped up so that now they turn out 15,000 impressions per hour while printing four colors on one side."

Norman Mack, Roberts and Porter Company, of Chicago, a widely traveled and authoritative representative of modern offset, declared: "The best color work I have ever seen was done by photo offset-and it was better than the best letterpress work I have seen."

When asked why so much of the offset color work seen on the West Coast seems inferior to letterpress color work, Mack replied: "The answer is that most of the skilled color men in offset are in the Middle West

and East."

Popular newcomer to the offset picture is the new automatic dampening machine. While the rollers on this machine are not used for dampening, Mack said that so far there have been no developments in which water is not essential in lithography although there have been probings in that direction.

Discussing the new trends, he remarked that while there are various experimental machines in use, it will probably be quite a number of years before they are commercially important. Most dramatic of these is the electronic machine, in which the rollers do not touch the paper. Also, there is a scribing tool, so new it isn't yet named, for use in making register marks. And a new film is being produced which "can be bonded to the plate and you are ready to go."

"New York and New England are the guinea pigs when it comes to new developments," he said. "They don't reach you folks until about a year later-which is an advantage because by then all the bugs have been removed."

The afternoon session was devoted to letterpress and xerography clinic with Allison Manners as presiding officer.



Lithographers National Association. Edgewater Beach Hotel, Chicago, September 7, 8, 9

Label Manufacturers' National Association. Edgewater Beach Hotel, Chicago. September 9, 10, 11

International Association of Printing House Craftsmen, Hotel Stevens, Chicago. September 10, 11, 12, 13

Sixth Educational Graphic Arts Exposition. International Amphitheatre, Chicago. September 11 through September 23

Book Manufacturers' Institute. Edgewater Beach Hotel Chicago. September 11, 12, 13

International Typographic Composition Association. Hotel Sheraton, Chicago, September 14, 15. 16

Printing Industry of America, Incorporated Palmer House, Chicago. September 17, 18, 19, 20, 21, 22, 23

National Printing Equipment Association, Incorporated. Palmer House, Chicago. September

National Graphic Arts Education Association Sherman Hotel, Chicago. September 21, 22, 23 Illinois Newspaper Mechanical Conference, Hotel Louis loliet, Ioliet, Illinois, September 23, 24 Kansas Newspaper Mechanical Conference, Kan-

san Hotel, Topeka. September 30, October 1 Direct Mail Advertising Association, Roosevelt Hotel, New York. October 4, 5, 6

American Photoengravers Association, Chalfonte-Haddon Hall Hotels, Atlantic City, New Jersey, October 9, 10, 11

Screen Frocess Printing Association. Hotel Gibson, Cincinnati. October 22, 23, 24, 25

Inland Daily Press Association. Congress Hotel, Chicago. October 23, 24

National Association of Photo-Lithographers. The Shoreham, Washington, D. C. October 25, 26, 27, 28

New England Mechanical Conference. Hotel Statler, Boston. October 28, 29

International Association of Electrotypers and Sterotypers. Bermuda cruise aboard the Queen of Bermuda and at the Princess Hotel, Bermuda. October 28, 29, 30, 31, November 1, 2, 3



"What are letterpressmen doing to combat the threat of lithography?" was asked by Mike Hynes, Seattle, Washington. "Letterpressmen have not kept up with lithography," he charged. "Otherwise, lithography would not be intruding in the letterpress business. A qualified pressman demands cuts, type, and other equipment of top quality. He works as he did twenty-five years ago, with his eyes on his wages. He doesn't extend any effort in the business."

Thanks to electronics, additional profits are being harvested in the graphic arts field, according to Allan M. Clark, Vancouver, B. C., and the "challenge of pricing ourselves out of business is being met by faster and better methods rather than by lowering the standards of the work.'

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The reproduction of flowers and fruit in color-always a difficult job -has been simplified by the use of the Springdale color scanner, a photo-electric engraver which works like a television scanner. The instrument was developed jointly by the Eastman Kodak Company and Time, Incorporated.

"Since the war there has been a healthy tendency for both letterpressmen and lithographers to work together in their processes," Clark

said.

Xerography, while not on the market as yet, was hailed as an important milestone in reproduction by George Y. Martin, Oregon State College Press at Corvallis. Derived from Greek words meaning "dry writing," xerography is simple and fast, with powder substituted for the conventional printers' ink. Reproduction can be done in black or in a wide variety of colors, he said. The process was developed by the Haloid Corporation, Rochester, New York. Two films were shown, one a history of the method, and the second, practical applications in pilot plants.

A feature of the convention was an auction of books from the library of the late H. F. "Bunny" Edmonds.

The conference closed with a banquet at which Rusell H. Herrell, the assistant to the president of the National Graphic Arts Expositions, Incorporated, described plans for the Sixth Graphic Arts Exposition, September 11-23, in Chicago at the International Amphitheatre.

Outgoing officers of the Pacific Society were Rudolph Ernst, president; Allison W. Manners, first vicepresident; Thomas F. Hislop, second vice-president; Allan M. Clark, third vice-president; and C. B. Park,

secretary-treasurer.

Specimen Review

SPECIMENS FOR CRITICISM MUST BE SENT FLAT, NOT ROLLED OR FOLDED. REPLIES CANNOT BE MADE BY MAIL. By J. L. Frayler

PETERSON PRINTING SERVICE, Council Bluffs, Iowa.—"Excellent" is the word for both the blotter, "The Race Has Been Run," and the circular heralding your success in having two of your entries among the first five highscoring ones in our business card contest. In our book you are one of the best printers of small business forms and promotional pieces in the land, so we can't point to a fault in these latest entries of yours for our criticism. We like silhouettes and consider them highly effective in publicity printing, so the picture of the lead horse (rig and man, too) in the harness race going at a fast clip across the orange band near the bottom of the blotter commands attention and interest right at the getaway. Being near the left side of the blotter might have the effect of drawing the eyes off the left side and away from text vision arrow like but if silhouette were positioned on the right side it might not so effectively suggest being away out in front. Even so, the items are highly impressive.

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SERVICE PRINTERS, of Duluth Minnesota.-We like the announcement of your printing firm's starting up in business. On card stock it folds twice, ends meeting at front, double door fashion. Printing across where ends meet the word "introducing" against screen background of irregular vignette-like shape appears in red while in the upper left-hand corner of the fold on the left side the silhouette of the circus barker in gray adds a touch of humor and is interesting. Notable feature of the opened spread is your business card (actual) inserted in the wide middle section. At ends of this (inside of the "doors") halftone illustrations of yourselves, Conrad and Dan Levenduski, principals, are effectively printed and bled off upper outside corners. Other readers, we feel sure, will find places to make use of the general idea. Layout and typography are both good and interesting, well fitted for the size, shape, and nature of the item and presswork is also good.

MERCHANTS PRINTING SERVICE, New York City.—It is plain, as you state, that you put in "a great deal of effort and planning" on the brochure testimonial to Mr. Leonard M. Eisenberg. While properly dignified the cover is characterful and artistic, in consequence forceful. Cover is of pale blue hue with white band across the front—this deckled at the edge. The decorative Old English "L" beginning the name seems weak in the gold, to stand farther from the eye than the blue in

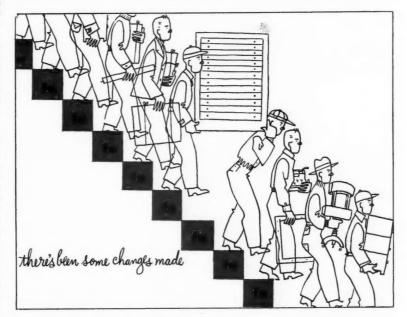
The DOG DAYS of August

Is your firm in business 12 months a year? Do you let the customers hunt you out when hot weather comes? Do you believe that people do not want what you have to sell in the month of August?

Tell more people what you have to sell—what you have to offer—how to get it—where and when! Right now is as good a time as any. Telephone 5-6541 for printing that is persuative—for printing that will give a shove to your August sales figures. That's the kind of work we do!

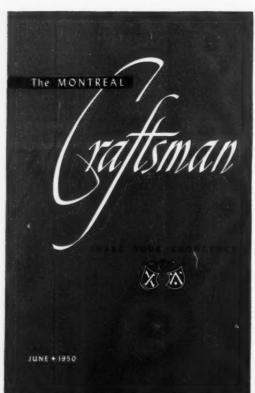
HERBERT W. SIMPSON INC.



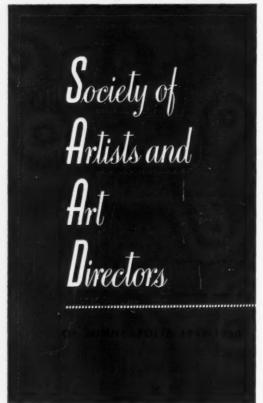




Simpson blotter has brown illustration and black lettering on white. Center Fine Arts Printing Company folder, 63% by 8% inches, has cartoons and script in brown, steps are black on blue — all on white. Bottom blotter's reverse band is green on brown. Screen, cord and dial are green; rest brown on white



Telling effect of reverse color plates printed in hues rather than in black — even in black — is recognized. Covers here shown are smash hits. A rich, possibly too deep, blue was used for the original of one above. Brilliant red was selected by Frank Kofron, Minneapolis, for his design, reproduced below, which is re-shown because line of type in black was previously omitted



A TYPESETTING PLANT ORGANIZED

to

WORK with and for you

A customer recently applogized for asking us to furnish a few

A customer recently apologized for asking us to furnish a few paragraphs and a display line. He planned to hand-set the balance because he had available time in his shop. We are glad to do it or to set one or a hundred lines to fit any situation which results in profit for our customer. It is part of the complete typesetting service. Type is Futura Medium Condensed, all-slug set.

CECIL H. WRIGHTSON, Inc. Complete Typesetting Service

74 INDIA STREET BOSTON 10, MASS. Branch in Miami, Florida

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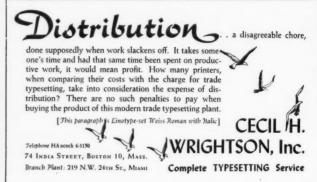
Appealing messages are frequently sent out on obverse side of Government postal cards by able and progressive Boston concern. Frank Lightdown, typographer of the house, deserves applause for his excellent layout and type selections. The second color of one reproduced above and a second below was a very light blue-gray tint

which the page otherwise is printed. It is decorative but not clear. We'd prefer it in blue along with the rest of the type of the page. The paper itself with its white quarter-inch edging on the front is decorative in itself and in view of that plainness is out of the question. The first inside page, top at fold of the oblong-shaped piece, is outstanding. A halftone portrait of Mr. Eisenberg printed in photobrown on coated paper with gloss inks is tipped on inside a realistic frame in "gold" and deep blue on stock used for booklet.

THE JOURNALISM LABORATORY PRESS, of Lexington, Virginia.—Our sincerest congratulations are accorded you on the beautiful typographical treatment of the booklet "Builders for the Third Century," meaning Washington and Lee University. Our own first choice among book types is the Baskerville you have handled so expertly and so sympathetically. We not only acclaim Baskerville but also your C. Harold

Lauck, consider him one of the country's best book typographers of this time. What thrills us, however, is the cover near the top of which the "design"—three simple lines of type with the school's shield between the second and third-is printed (yes, printed and not gold leaf stamped) in "gold" ink on black antique cover paper. The comparative dull nature is compensated for in large measure by the beauty of the simple composition. We consider the design too high on the page, not in accordance with best balance and proportion, the former because it seems too top-heavy and the latter because the area above the first line is too small in relation to that below the final line. The effort seems to have been to have side margins approximate the top margin. When there are two things desirable of achievement our view is that it is better to effect a compromise rather than fully achieve one and make violation of the other distinctly noticeable.

Specimen Review is sample size this month to make way for special features of this issue. (Same operation performed on other departments.) To avoid shortchanging readers, a super-size Specimen Review will appear in an early issue





WILLIAM A. WILDE, JR., is the Adirondack Club's new executive officer. Mr. Wilde is now an assistant to the production executive and an estimator at the Amsterdam Printing and Lithographing Company, Amsterdam, New York. He was a captain during World War II in the European theatre. Edward Bovee, of Gioversville, New York, is secretary of this club which was organized early in 1937

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THOMAS L. COOPER is president of the Atlanta Club and also of the Southern Engraving Company. During the war Cooper served overseas as an Air Intelligence officer. He is thirty-two, married, and very active in graphic arts, civic, and church organizations. His fellow officers are: vice-presidents Donald Anderson and Harold Cavanaugh; secretary Joe L. Self; and treasurer L. P. Prince

1950 Album of Presidents

International Association of Printing House Craftsmen



★ The Inland Printer is pleased to present this seventh annual album of local club presidents. The portraits are arranged alphabetically by clubs. A few biographies and photographs were not available at closing time, but some late-comers will be shown in our next issue



JOHN T. PLUHAR, newly elected president of the Baltimorean. He is a native Baltimorean. He is following in his father's footsteps in the printing trade. He has been associated with the Maurice Leeser Company for fifteen years and an active Craftsman for many years. Edited the Craft News, club bulletin. Irving Wells is the club secretary



TOM RICE, president of the Blue Mountain Club, is married and has one son in Whitman College. He began his career thirty-seven years ago; today he is president of the Inland Printing Company at Walla Walla, Washington, printers and lithographers. Mr. Rice joined the Craftsmen twenty-three years ago when he worked in Seattle. Among his hobbies is playing the clarinet in the local Elks club band



JOHN G. GLOVER is president of the Boston Club. Mr. Glover is in charge of merchant sales for Tileston and Hollingsworth Company. He has been a member of the club since April, 1939, and on the board of governors since 1942. Other club officers include: Arthur Gleichauff, the first vice-president; William McFarlin now second vice-president, and Harry M. Faunce, secretary - treasurer



JOSEPH J. MUELLER presides over the Buffalo Club. He is purchasing agent for the J. W. Clement Company, where he has worked for the past eighteen years. He lives in Buffalo with his wife and three boys and leads a busy life. The bother officers of the club include: Arthur W. Hoglink, vice-president; Douglas W. Clive, treasurer; and Edward G. Wieritsch, as secretary. Forward in '50 goes this club!



FRED MERRITT is president of the Cedar Rapids Craftsmen Club. He is a charter member of the group and plant superintendent of the Tru-Art Engraving Company. For the past twenty-five years he has been in the industry. The club's officers include: Albin F. Prucha, the first vice-president; James H. McAndrews, second vice-president; Roger Hawley, recording secretary; and E. F. Pribyl, financial secretary



FRANK BARTOJAY heads Chicago Club. He entered the printing field in 1927, in 1942 became associated with the Central Typesetting and Electrotyping Company. Mr. Bartojay is now special service representative for the W. F. Hall Printing Company. His fellow officers are Arthur C. Colton and James R. Anderson, vice-presidents; Michael Ivers, financial secretary; Frank Pugliese, recording secretary



H. E. CRAMER, Cincinnati Club president, is superintendent of the Lockland carton plant of the Gardner Board and Carton Company. Mr. Cramer, who first entered the printing industry twenty years ago with the above company, is married and has two daughters. Wilbert Rosenthal and Elmore Price are the club vice-presidents and Luther Engle is the secretary-treasurer



THOMAS P. MAHONEY leads the Cleveland Club. He is also chairman of the Technical Commission of the Craftsmen, having held the job for two years. Mr. Mahoney arrived in Cleveland in 1944, and for the past two years has been general manager of American Color Process Company. George Wise is his first vice-president; Arthur O. Fiebert is second vice-president; Earl Boner, treasurer; Robert Pettet, secretary



LOUIS F. MADDEN is Columbus Club president. Mr. Madden is production manager of the Spencer, Walker Press, Incorporated, publication printers. He started as a composing room trainee in 1923, and graduated from advertising and commercial art schools. He is best known as a typographer. In 1942, he joined the Columbus Club and has held various offices. A. F. Miller is secretary of the club



ROBERT E. DURICK, Connecticut Valley Club president, joined the Sample-Durick Company in 1924. He worked his way up from an apprentice diemaker to become vice-president in charge of production upon his father's retirement four years ago. Mr. Durick joined the Connecticut Valley Club four years ago. His able club secretary is Stanley Curtis. This club is a veteran, formed back in 1913



T. E. HENRY, Dallas Club president, is vice-president of John A. Scott Company, Incorporated, typographers of Dallas. For thirty-two years he has been in some phase of printing, advertising, and radio. A native of Texas, Mr. Henry is married, has one daughter and three grandchildren. Other officers of the Dallas Club are B. P. Ridgway, vice-president; and Walter W. Summey as the secretary-treasurer



RUFUS H. SESLAR, top CraftsmarRANK PO of the Dayton Club, has been as the newl the organization for ten years. Houston Cl began as an apprentice pressmarpound Print in 1929 at Stanley Greetingsmy, after Incorporated, and now supervisance turn. all production there. He is the lanks and proud father of two childreng. M. N. Minor Noff, Loren Askins and the club Robert Carpenter are club vicaccretary a presidents; Howard Massman founded in secretary, Carl H. Harner treasurementy-found





TED JAROSIK was recently elected president of the Detroit Club. This October 18, 1950, will find Ted with twenty-five years of steady mechanical service to Ohio as well as Michigan printers. His customers are his good friends. Mr. Jarosik rejoined the club in 1942, and has been technical editor of the club's Craftoples. Albert Sattler is secretary of this active and energetic local craftsmen organization



ELMER H. TESS again heads Duluth-Superior Club, first president to be re-elected. His outstanding record includes setting up the Winnipeg Good-Will Fund for aid to the recent flood-stricken members of Winnipeg Club. Mr. Tess is the owner and manager of the T. and T. Party Service of Duluth, a specialty printing and design firm. Oscar Ronundstad is vice-president; John A. Yernberg, secretary



PAUL P. GUENETTE is not only president of the Edmonton Club but also president and managing director of Modern Press Limited, Alberta, Canada. He began his career as an apprentice pressman in 1927. His is the only firm to be located in an aircraft hangar (at the Edmonton Municipal Airport). He has five daughters. Robert Ozee is the club secretary. Group was organized a year ago



W. H. YEAGER, president of the FRANK Lansing Clu years has been general super the Franklin tendent of the Dispatch Printi Lansing, M and Engraving Company. He begi Chicago, Mi as an apprentice in 1906; is a proaching his fortieth year as fied printing member of the I.T.U. Other off cers: Louis B. Evers and R. 1950, and h officers: the Parson, vice-presidents; Victor Hilliary, Wil Pierce, secretary; and James and Crispin; Tait is treasurer of this baby cluend secretar



O. B. SCHWAB was recently elected president of Fort Wayne Club. He entered the photoengraving business and in 1944 organized Lincoln Reproductions, Incorporated. He is a member of the Photo-Engraving Research, Incorporated. His club, chartered in 1948, sponsored the Michiana Club. Vice-presidents are Louis E. Kenyon and Winston M. Lee, treasurer Clint Barnes, and secretary Herbert W. Schabacker



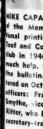
BALLARD CONNELL is the able president of the Fort Worth Club. A charter member, he has been active since the club was first organized in the early part of 1940. Mr. Connell is a partner of Hentz and Connell Photo-Engraving Company, of Fort Worth. Ned Leach is club vice-president and Alvin W. Mosley skilfully handles the combined duties of both secretary



JAMES H. COOPER is the 1950 president of the Grand Rapids Club. Mr. Cooper is machine room foreman at Jaqua Advertising. He began his career with the Dean-Hicks Company shortly after World War I and joined the Grand Rapids Club in 1947. His hobby is golf when not too busy with his three sons. Last year he was first vice-president of the club. Paul Rohrkemper is his very capable secretary



CLAD E. POLLEY is the nev elected leader of the Monoli Club. He started out his career the composing room of the Sion City (Iowa) Journal in 1925; as served twenty years as a printer United States Navy. Now is a sistant plant superintendent of the Publications and Printing Office Pearl Harbor. Frank White is divice-president; S. O. Peterson treasurer; and Ben Gold is secrets.





top Craftsm FRANK POUND, born in Georgia, b, has been is the newly elected prexy of the ten years. Houston Club. He also owns the trice pressmoond Printing and Stationery Comey Greetingsany, after a railroad and insurvow supervisance turn. He specializes in legal et. He is tholanks and commercial job printitude of the club and K. G. Wheller is the club vice-president Askins and the club and K. G. Wheller is the club vice-creatry and treasurer. Club was Massman founded in 1934, with a roster of arner treasureventy-four members



J. H. CLENDENIN not only heads the Indianapolis Club but also is vice-president of the Indianapolis Blue Print and Lithograph Company and has two children. He entered the lithograph business as a photographer sixteen years ago. Alvin F. Friedrich and Stephen F. Hopkins are vice-presidents of the club; Alvin B. Dorr is treasurer; and G. Harvey Petty and John G. Leech are the secretaries



ADAM H. BRUT, recently elected president of the Jacksonville Club, moved to Florida back in 1936. He is superintendent of the H. P. Tuttle Printing Company. Mr. Brut was one of his club's original organizers and its first secretary. He was recently elected president of the Seventh District Conference. During the war he was a Navy printer. Charles Newton is secretary of this club, organized in 1947



EDWARD J. NASTALI, the Kansas City Club president, arrived at Kansas City in 1946 to become plant superintendent of the Smith-Grieves Printing Company, specialists in magazine and publication printing. Mr. Nastali formerly lived and worked in Chicago in several printing plants and also was a teacher of advanced presswork af a trade school. He is thirty-six. Basil Wakeland is secretary



A FRANK BARR, who heads the past twent Lansing Club, is an estimator for neral superint the Franklin DeKleine Company in patch Printin Lansing, Michigan. A native of Chicago, Mr. Barr has had diversi-1906; is all ide printing experience. This new thy year as (ub was established on April 29, U. Other off 1950, and has 122 members. Other sr and R. ints; Victor officers: the vice-presidents Chas. Milliary, William Oding, and Leonard Crispin; treasurer Walter Kipke; this baby dw and secretary M. B. Loomis



CHARLES R. FOWLER, the Lehigh Valley Club top craftsman, is secretary of Hobson Printing Company, at Easton, Pennsylvania. He started with the firm in 1934; purchasing a controlling interest in 1947. He is thirty-two, married, and has one daughter. H. Leslie Varley, production assistant at the Mack Printing Company, is recording secretary of the club once called Allentown Club



FRED E. SIMMONDS, president of the London Club, Ontario, Canada, began as a law clerk. He began again as a messenger at Artcraft Engravers Limited in 1930—and is now sales production manager and a director of the firm. The London Club, founded in 1948, has doubled its membership. Reg Facer and Ray Correll are vice-presidents; Milt Knowles is secretary; and Bill Banfield is treasurer



ALLISON W. MANNERS, the Los Angeles Club president, is linotype instructor at Los Angeles Trade-Technical Junior College. He has held many club offices and served on many committees. Mr. Manners is aided by Gordon Matson, first vice-president; Cyril Stanley, the second vice-president; Isadore Margolin, secretary-treasurer; and Fred Lawton, recording secretary. The club has some 250 members



MIKE CAPADALIS, new president the Honol the Memphis Club, is promohis caree onal printing manager of S. C. loof and Company. He joined the of the Sic in 1925; at dub in 1946, and credits it with as a printe much help. He in turn has edited the bulletin. The club was char-Now is tered on October 14 in 1926. Other ting Office officers: Frank Elam and Joseph White is Smythe, vice-presidents, and C. C. . Peterson Ritter, who holds the double job of secretary-freasurer



JAMES C. GILLIS is president of the new Michiana Club. A native of South Bend, he is president of LaSalle Photo-Engraving Corporation. World War II found him in the Army Engineers. He has also had engraving and lithographing experience. He was installed as president of the Michiana Club on May 19. Lester E. Peterson is secretary. Members are from northern Indiana and southern Michigan



EARL S. ELLIS now heads the Milwaukee-Racine Club. He is the purchasing and sales co-ordinator for the Western States Envelope Company, with whom he has been affiliated for eighteen years. An expert golfer, he holds two legs on the International Golf Trophy put in play by the Cleveland Club in 1948. Mr. Ellis is married and has four boys. Percy Champion is publicity chairman for this active club



DUDLEY E. WOEHNING presides at Minneapolis Club meetings. He is in charge of production and purchasing at the Colwell Press, where he has worked for fourteen years, except for almost four years in the Navy Air Corps during the war. He has served on various committees, been chairman of the board of governors and vice-president of the club. William J. Casey is secretary of the club



JAMES McLEAN, president of the Montreal Club, is also president of McLean Brothers Limited. He headed the club publicity committee to new attendance records. Fond father of two livewires, he also likes acquatics. A.T. Metcalfe is the club honorary president; G. Wells, E. Varin, and B. Rochford, vice-prexies; C. Tomalty secretarytreasurer. The club is one of the largest in the Association



HOMER G. BOYER has the gavel as the president of the Nashville Craftsmen. Mr. Boyer, who has been asosciated with the Ambrose Printing Company since 1934, has edited the club bulletin and been active in all organization affairs. Other 1950 officers are: Lewis G. Akin, first vice-president; William M. Hill, the second vice-president? George Jones, secretary-treasurer. Nashville was chartered in 1938



EPHROM J. DAVIDSON, president of New Haven District Club, is president and treasurer of the firm established in 1914 by his father. He served in the artillery during World War II, then after his discharge in 1945, he bought the controlling interest in the company, expanding it to include both offset and letterpress, and a complete pamphlet bindery. He is a delegate to the convention



WILLIAM P. GLEASON, the New York Club president, started eighteen years ago in the Printing House of William E. Rudge. He now represents Colonial Press; is a past president of the Navigators. Other officers of this, the founding club of the Craftsmen movement, are: James L. Goggins and Edward C. Sanna, the vice-presidents; Carl Westhelle, treasurer, and Edward B. Smith, secretary

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D. BRUCE PRICE, Oklahoma City Club president-elect, is foreman of the lithographing department at H. Dorsey Douglas, Incorporated. He served his apprenticeship as a hand transferer with the Dorsey Company, Dallas, Texas, starting in 1923, changing to photolithography back in 1930. Mr. Price is a charter member of the Club; has served as a member of the board. Ted Brown is club secretary



J. L. CAMPBELL, JR., elected to the presidency of the Omaha Club, is factory superintendent at the Bemis Brothers Bag Company, Omaha. He is thirty-five, is married, and has one daughter. He will take up his duties as president on September 13, 1950. Ronald Rosseter is the secretary. Omaha Club was the first Craftsmen club west of Chicago to entertain an International convention



W. CLIFFORD PEALE is president of the Orange County Club out in ordinarily sunny California. Mr. Peale is well known in newspaper circles on the West Coast as he has been in the field for approximately forty-five years. He has been located in Santa Ana for seventeen years and owns as well as operates the Quality Printers. Louis C. Larson is the secretary of this Orange County group



ARCHIE J. HAMPTON is the new head of the Philadelphia Craftsmen. He is superintendent of Gathel & Manning Company, photoengravers and designers, a position he has held for twenty years. He has also celebrated his golden anniversary with that firm, where he served his apprenticeship. He has belonged to the club for twenty-five years and has served it in various capacities



ANDY CHUKA, the president of the Phoenix Club, also headed it in 1934 and 1939. He also is a past president of Pacific Society of Printing House Craftsmen (1937). Andy is noted for his talent to out-Groucho Groucho Marx. He is a charter member of the Phoenix group. Howard Wedel, Cecil Gilliam, and H. C. Lowe are vice-presidents; Cloyd Harper is the secretary-treasurer



GEORGE Y. MARTIN, the newly elected president of Portland Club affairs, is superintendent of the Oregon State College Press, Corvallis, Oregon. He traveled regularly to Portland meetings from Corvallis and served on numerous committees. The other officers who were elected June 12: George Y. Mackie, vice-president, and Lawrence V. Beckmeyer, re-elected as the secretary-treasurer of this club



FRANCIS E. FARLEY, Providence Club's second-term president, has been with the Typesetting Service Company for twenty years and plant superintendent for the past nine years. He has been a member of the Providence group for ten years and served as chairman of many committees. He edits The Crier and has well deserved his re-election. Edward J. Flanagan is secretary-freasurer



JAMES F. HUDSON has just been chosen to head the Regina Craftsmen, a club that is less than two years old but is growing steadily. Hudson began the printing trade on a country weekly while still in school. He now is the shop superintendent at Central Press, a job he has held for eight years, and is a director of the firm. A. G. Turner is secretary-treasurer of this Canadian Craftsmen club

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JOHN C. HILDEBRAND, a native of Richmond, leads Richmond Club this year. Foreman of the lithograph department at Everrett Waddy Company. Mr. Hildebrand has three children and his hobbies are his five grandchildren, club, and salt water fishing. His first vice-president is Francis Vaughan; the second vice-president is Wallace Jones; Charles Hayes, a past president of the club, is secretary

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MORRIS F. STYLES, president of the Rochester Club, is superintendent on the staff of Ayer and Streb Company. The Rochester Club will be celebrating its thirtieth birthday in November. Other officers of this club are: Harry Smith, Ir., and Noah Bryant, vice-presidents; Harold Quell, secretary-treasurer; and Henri Lecomte, assistant secretary - treasurer. The Rochester Club now has 165 members



GEORGE W. REMSEN, Rock River Valley Club president-elect, heads the Thrift-Remsen Printers and is secretary-treasurer of the Remmel Lithographing Company. He is associated with his father D. E. Remsen in the operation of the firms. A graduate of the University of Illinois, he served five years as a major in World War II. Fred McCloskey was re-elected secretary of Rock River Valley Club



CARL F. WALSER, president-elect of the Sacramento Club, served his apprenticeship in Sioux Falls, South Dakota. In 1940 he was co-founder of San-Wal Printing Company. He is a World War II man. Harley Raymond is vice-president of this club and John J. O'Brien is secretary-treasurer. On the board of directors: Allen Randall, Lewis H. Walker, Ralph A. Ellison, Marion Lasalle, and Cecil E. Horner



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HERMAN FRIEBEL, St. Louis Club presiding officer, in 1930 started to work in a pressroom—at the age of fifteen. Upon returning from war, he went to work as a printing estimator and now is employed by Yon Hoffmann Press. Mr. Friebel joined the club in 1946 and has served it conscientiously since then in several capacities. J. Deuter Renk is secretary. Club founded in 1920; George Ortleb, first president



GEORGE STEPKA, new president of the St. Paul Club, is in charge of the composing end of Webb Publishing Company's magazine The Farmer. He has worked for the company for the past twenty-five years; joined the club in 1936. He has held most all club offices. Club officers: A. T. Murfin, vice-president; Vincent Kassube, secretary; and Raymond Kelly, treasurer. The club was founded in 1924



ROBERT O. BELLINGER presides over the San Antonio Club. He began as a galley boy on the San Antonio Light in 1917. In 1928 he went into business as the co-owner of Bellinger Brothers Printing Company in San Antonio. Mr. Bellinger is a charter member of the San Antonio Club. He is an amateur musician. Other officers: vice-president Robert Corbin; seer retary-treasurer G. C. Stowitts



PETER S. FRY guides the San Fernando Valley Club and is one of the owners of Pioneer Printing Company, one of the oldest established printing shops in Glendale. His past experience includes three years with the Navy and two years in the hotel publication business. The Club is one year old but it is a thriving baby with a membership of sixty-five. Leona Spear is the corresponding secretary



C. DONALD HARRIS, primus of the San Francisco Club, entered the printing industry as an apprentice with the Eureka Press and is there today. His spare time is occupied with a "Dad's Club" organization that sponsors four youth movements. Club vice-presidents are Peter D. Nielsen and Charles Wood. Edward Kielberg is secretary-treasurer of this Craftsmen club founded in October, 1921



MAYNARD J. MALE, 1950-1951 head of the Santa Barbara Club, is a vocational printing instructor and a charter member of the Santa Barbara Club. After eleven years as a journeyman printer he transferred to the teaching end. Other club officers are: Jay Price, vice-president and Darvey E. Carlsen, secretary-treasurer. The club was established in 1946, is energetic and looks forward to a big year



ORIN F. DREW, JR., president of the Seattle Club, is vice-president of Orrin F. Drew, Incorporated, and of the third generation of his family to be in the printing business in Seattle. Drew served four years in the war as an Air Force photographer, returning to Seattle and his letterpress printing of publications and commercial work. His hobbies are golf, swimming, and—of course—photography



CHARLES W. JOSLYN, new president of the Southwest Idaho Club, also is president of Joslyn and Johnston, lithographers, Boise, Idaho. Mr. Joslyn served five years in the United States Air Force and has maintained his interest in high speed aeronautics since. A charter member of Southwest Idaho Club, he was vice-president in 1948-49. R. W. York is secretary of the Mountain State Craftsmen group



J. EDWARD HITCHCOCK, JR., is president of the Syracuse Club and he also represents the third generation of his family to be in the printing business. A Hamilton College graduate, he returned to Onondaga Printing Company after World War II; became a partner in the business in January, 1947. He is a charter member of the club, and is a director of Advertising & Sales Club of Syracuse



HENRY J. BOES, leader of the Toledo Club, is vice - president of Ohio Lithographing Company. Other officers include vice-presidents Vince Brady and Hamilton MacArthur, treasurer Glenn Horton, and secretaries Morgan Brooke and Harold J. Seitz. The club is proud of its bulletin, produced without solicitations. Toledo was host to the Fifth District Conference this year



MALBERT HORTON is the new president of the Topeka Club. "Hal" is plant manager at the Burge Printing Company in Topeka. Though only thirty-one, he has been in the printing business for over a decade; is married and has two children. Other club officers: the vice-presidents Frank Primm, Harry Orr; Dorman Granger, treasurer; John W. Shuart, secretary. Club founded in 1921



TOM MC GEE, the Toronto Club president, was born in Glasgow, Scotland. Started with Ault and Wiborg of Canada in June, 1919; is a key man there today. He is keenly interested in all Craftsmen activities. Toronto Club, founded in 1921, recently elected Norman Conquergood and Len S. Thompson vice-presidents; George Savers, secretary, with Ed Adair as the club treasurer





J. PARKER HOLLAND was unanimously elected president of the Tulsa Club. For the past seven years he has been the production manager of the Petroleum Publishing Company. He studied at Pressman's Home. Other officers: vice - presidents Walter Burkhart and Arnold Bishopberger; with Fred Thompson, secretary and treasurer; and A. F. Hyden, executive secretary of the club



ROYSTON F. SPRING, Utica Club leading Craftsman, is Utica's branch manager of the Alling and Cory Company, paper merchants. He has been in the paper business for fourteen years. Unanimously chosen with Mr. Spring were the two vice-president Richard F. McCale and Mark Holmes; secretary Melvin G. Dodge, and club treasurer Roy Bingel. The club bulletin, "On the Beam" has often won awards



HARRY A. SORLEY is Vancouver Craftsmen Club chief. He has worked for the National Paper Box Limited since 1922, and now is general superintendent of the plant. He is married and has two children. He brought a popular "Quiz Night" to his club and climaxed 1949 with a memorable Power River Paper Mill trip for Vancouver, Seattle, and Portland Craftsmen voyageurs



MORRIS H. REAVES, Washington Club's president re-elect for the coming year, has been composing superintendent of the Government Printing Office since 1943. Thomas F. Slattery and Henry J. Laupp are vice-presidents of the club; Harold G. Crankshaw and William W. Barnes, secretaries; and Albert O. Luther is treasurer of this club founded June 3, 1919, a charter member of the International



MARK W. YAGGY, Waterloo Club president for a second term, is a partner of the Lincoln Press. He is a former school teacher; has a B.A. degree in Industrial Arts. Mr. Yaggy entered the printing business after his Army discharge in 1946. The club, with a membership of twenty-six, had a fine year. Other officers are: Olley E. Baker, vice-president; Russell E. Congdon, secretary; Cecil Kleist, treasurer



CLAUDE S. GUTHRIE, new president of the Wichita Club, began his printing career on a small country weekly in Missouri back in 1909. He was superintendent on the Fulton (Missouri) Gazette and for twenty years was commercial printing superintendent of The Wichita Eagle. Mr. Guthrie became a member of the Wichita Craftsmen Club in 1922. Clarence M. Love is again secretary of the club



of the Winnipeg Club, was born in 1904 near Minnedosa, Manitoba. His printing career began as a printer's devil at the Telegram Job Printing Company. He is now the assistant superintendent at Advocate Printers. A keen student of type and design, he joined the Craftsmen in 1941. Other officers are: Reg Rimmer, vice-president, Len A. Wimble, secretary-treasurer



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W. PAUL ROWLAND, Worcester County Club president, works at the Colonial Press, Clinton, Massachusetts. He has been a member of the Worcester County Club for six years. His background includes work at the Kingsport and Otterbein presses. Mr. Rowland succeeds the late Glenn W. Kellogg as the Worcester Club president. E. W. Haskell is the secretary of this fifteen-year-old club

* Editorial

 PRINTING INDUSTRY OF AMERICA, national association of the commercial printing industry, is five years old.
 Few organizations in any industry have accomplished so much in so short a time.

It has made rapid and substantial progress toward the long-sought goal of a unified industry, and by so doing has built a strong, truly representative organization whose voice is heard with respect when it speaks

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The P. I. A. program, pursuing the objectives set for it five years ago, has progressed along two broad lines—

one external in nature, the other internal.

In the external or public relations phase of this program, P. I. A. is succeeding in building respect and prestige for the industry as a whole, is making its voice heard as the spokesman for a powerful American industry, and is cementing better relations with government, labor, suppliers, customers, and the general public.

The internal phase of the P. I. A. program has been devoted to helping the individual printer become a better business man so that he will be able not only to conduct his business more successfully and more profitably, but also that he may be worthy of and contribute to the prestige the association is building for the entire industry.

P. I. A. has became the strong right arm of printing management, providing, as THE INLAND PRINTER provides, the printer with the expert guidance he needs for the successful operation of his business but which he, a typical small business man, could not afford to buy.

P. I. A. is engaged in a continuing program of providing its members with information and guidance in the fields of sales, production, financial, and personnel management. From among those who are making the best use of these management tools is arising a new generation of printers who can compete in management know-how with the best in any industry, large or small.

Through the publications and services of the two autonomous industrial relations groups, the Union Employers Section and the Master Printers Section, members of P. I. A., whether union or open-shop employers, are much better informed on labor matters and much better prepared to deal with unions on their own levels of strategy and strength than ever been before.

How does one account for the vitality of P. I. A. and the success it has enjoyed in five short years? In our opinion there are several contributing factors.

In the first place, the founding fathers built well. They put aside prejudices and differences which had prevented unity.

They had a high level concept of P. I. A. and its activities. Without neglecting its function as a service organization for its members, P. I. A. has taken the lead in co-operating with other industry groups in a search for solutions of national problems of the printing industry.

How this concept is working out in practice is ably demonstrated by the year-old Research and Engineering Council of the Graphic Arts Industry. Conceived and nurtured and still staffed by P. I. A., the Research Council is nevertheless now an independent organization in its own right. Forty industry groups and more than three hundred companies and individuals, all working

through the Council, are co-operating in stimulating technological development in the industry and disseminating technical information.

Along the same lines, an Education Council of the Graphic Arts Industry is in the process of organization.

A second factor which is contributing to the vitality of P. I. A. is the high degree of active participation by members in the association's program. There are no figureheads in the official family. Everybody from the president down to the four hundred members of various committees contributes liberally of his time and talent to the P. I. A. program. The highest paid management and technical personnel are active on these committees.

A third factor responsible for its vitality is closely related to the one just discussed. Because the impetus and direction of activity stems from the members themselves, P. I. A. services are closely geared to the actual

needs of the industry.

This close attunement to actual industry needs is further intensified by the organizational structure of the national association. P. I. A. is largely a federation of local associations enjoying a high degree of autonomy, rather than a strongly centralized national association. Close contact is maintained with the members-at-large through a close tie-up with special regional directors.

In the fulfillment of its program, P. I. A. is realistic rather than ambitious. It does not bite off more than it can chew, nor spread itself too thin. Its budget is not unlimited; therefore, first things are done first, and done well, before proceeding to the next important activity.

A case in point is the Course in Selling Printing, the first in a series of several textbooks to be prepared by the Education Committee. At the end of the war P. I. A. anticipated the present buyer's market, and scheduled its selling course for completion ahead of the others.

During its brief history, P. I. A. has twice received public acclaim for its activity on behalf of a major American Industry. Last year it was awarded the trade association Certificate of Tribute of the Chamber of Commerce of the United States, and before that received the 1946 Award for Distinguished Service of the American Trade Association Executives.

In saluting Printing Industry of America in the year of its fifth anniversary, The Inland Printer also wishes to pay tribute to the late James F. Newcomb, who is generally credited with being the "father of P. I. A." because of his efforts in behalf of printers.

It would be impossible to credit by name all those who had a hand in creating the national organization, but there are seven men who, along with Mr. Newcomb, constituted the "task committee" which formed P. I. A., and as such they stand as a symbol for all the industry leaders who contributed to the movement. These men, permanent niches in printing's hall who hav as the f nding fathers of P. I. A. are: Raymond of far Blat hbergen Donald L. Boyd, Robert H. Caffee, Carl Harold W innaga Clyde K. Murphy, and h Thon

A lof the men are all active their dustry and are a source of aspiration to those who is we and in the future will guide F inting In stry of America.

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• WE ALL NEED to remember that in the fiercely competitive market in which we sell, there are two sides to most questions; our side and our competitor's. Which side we are on depends on whether we are on the inside looking out and hoping to stay there, or on the outside looking in and hoping that conditions will be reversed.

Lest this sound too much like a riddle, let us tell the story of the incident which inspired the discussion. It came about in this wise: We were talking to an agency man who was hiring an assistant advertising manager. He had many applications before him-good, bad, and indifferent. Of them, one young man who had worked out a very careful resume' of his past successes, had listed among his accomplishments the following statement: "When I came to X-Company they were buying their printing from a number of different sources. I consolidated these purchases with one house and thus saved the X- Company a great deal of money." (The italics are ours.)

Airs Lack of Knowledge

Now every salesman who is trying to break into an account sewed up like that will be ready with a whole string of reasons as to why our friend was on the wrong track. When the applicant said that he saved money by entrusting his whole printing program to one firm, the advertising man looked further in the resume' and saw that he was young and that he claimed to be ambitious. He therefore suspected the young man of lack of knowledge plus a desire to say something he thought would sound well. And when he found that the applicant said nothing about how this program saved money, his prospective employer suspected him still further.

For our part we recalled a recent statement of a buyer in a similar situation. This buyer had the problem of turning out considerable direct mail work that called for very careful color-matching. A number of the products his company marketed were alloys, each of which was of a distinguishing color. It was necessary that the standard color be matched exactly each time a brochure was printed advertising one of these alloys. And the problem of matching those colors called for expert handling.

Pays for Extra Service

This purchaser had a different viewpoint. Said he, "Frankly, if I had a good assistant I could save money by getting bids and letting the assistant keep the printers in line on quality. But I don't have the assistant and I have the good luck to have a printer who takes the necessary care of my work. I know he charges me extra for this service but in my position the extra care is worth it."

So there we have the word of an experienced buyer who says frankly that he pays more for the service he gets when he turns all his printing over to one man. And he justifies paying more on the ground that he cannot get the appropriation for extra help in his office.

All of us are likely to find ourselves competing on one side or the other of this situation at some time. Therefore it may be worth our while to analyze the pros and cons of the question and see what we can offer, whichever way we may be selling.

First, let us take some of the objections to giving one printer all of the business. No matter how good he is, no one printer has a monopoly on printing ideas. He may be alert and progressive but it is still likely that a competitor or competitors will have ideas he has missed. Moreover, all of us have a tendency to become set in our ways and a buyer who works with only one printer has a tendency

to become set in the ways of that particular printer. And, unless that printer is exceptionally progressive, this may lead to stagnation.

Then comes the question of capacity. Every printer finds his facilities jammed at some time or other when important jobs come simultaneously. Even his favored customer may have too much work for him to handle at one time. What will the printer do with the surplus? Will he farm it out to another printer who may do inferior work? Or will he pay still another printer a bonus for extra quality? And if he pays the bonus will he pass the extra cost on to his customer? Or on the other hand, does he have so little work in his shop that the question of overcrowding never comes up? If he does, his prices are sure to be high. All of these questions come up when the buyer depends on one printer. They must be answered at one time or another.

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Then, too, there is the question of process. Does the lone printer have both offset and letterpress? It is an unusual advertiser that plans his work for only one or the other and unless the printer is expert at both the customer will lose on quality or price, one way or the other.

But our young friend based his argument solely on the question of price. On the basis of competing with the buyer who uses the services of three or four different printers of equal grade and care in workmanship the price advantage is all with the buyer who spreads his work around. Printers, being human, naturally figure their prices with a closer margin of profit when they are not sure who will get the job than when it is a foregone conclusion. And, while we hate to say this, experienced buyers know it often happens that they will save considerable money through getting the benefit of an estimator's mistake. This is unlikely when only one printer is used because in that case the printer often is not asked for a price in advance.

Equipment Makes Difference

More often, a difference in equipment will give one printer out of three or four an advantage in cost. The lone printer must always figure on using the same equipment. It is clear the break in price is more likely to occur on a multiple inquiry.

On the other hand, what are the advantages a printer can offer when he tries to persuade a customer to go on an account basis and buy all his printing from one source? A salesman must be able to recite them.

In the first place, such a printer expects to carry on as though he were a member of the customer's production staff. In the case of the buyer mentioned earlier the printer was paid more because he had made a detailed study of the needs of the customer. He was able to handle important printing without extra instruction or supervision. He was able to free the customer's representative for other work while he carried out the details of the printing. This is a convenience for the buyer and if it actually releases him for more important duties it will save the customer money.

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Must Study Requirements

The salesman who expects to handle all his customer's printing must put in weeks and months of study on his requirements. He must be ready to handle the small jobs as well as the large. If the customer needs letterheads or business forms in addition to his advertising printing the printer must be ready to supply them. When the buyer trusts the printer implicitly the latter will generally keep in touch with the stocknoom and will let the buyer know when supplies of standard items are running low.

Furthermore, here is one point at which some printers do cut prices, at least to a limited extent, when they get a customer's entire printing business. Such a contract obviates the necessity for "plugging" the account. Calls are made only when necessary to get instructions for new printing. Repeat orders are generally mailed in with possibly a telephone call to straighten out minor details. The time a salesman spends making calls on the account is reduced to an absolute minimum. And if, as is often the case, it is a house account the work is handled without chargeable sales expense. All special details are then cared for by the boss. Thus much of the work can be priced 10 per cent below the ordinary market without loss to the printer. We are not saying that this is always done, we are simply saying that under the stated circumstances it can be done. And if it is done, there is naturally a saving to the customer.

A printer who does all the work for an account can make additional savings through his purchases. He can standardize on paper and buy larger quantities at lower prices. Probably he can reduce the number of grades used. Possibly he can arrange for combination runs on the forms. And with a steady flow of work assured over the years the

printer can put in special machinery and attachments to save money. He can install devices which though they would not pay out for a single run will yield a profit over a term of years.

The writer recalls being pitched out of the running in just this way on an order for subscription gift cards for one of our large weeklies. In this case there was no one letterpress printer handling the magazine's printing. As a matter of fact, most of it was done by offset. But one printer had taken a gamble that he could make a profit if he could get all the subscription card printing and had equipped a big cylinder with special perforators. The result of this special equipment was that the first order paid out for him and on all subsequent orders he was able to undersell competition at a profit.

The printer who has all of one client's work can find many places to make such savings. Particularly he can plate many jobs with the assurance that he will be able to use

that the client pays more than if he bought in the open market. In any event it is unlikely that the customer can secure all the advantages of an account relationship simply by buying all his printing from one house. Account relationships involve long study.

Both Sides Have Good Points

This article may look as though we were trying to carry water on both shoulders. In a sense we are. But the situation we have discussed comes up frequently in our efforts to break into new accounts. And it was our thought that by giving characteristics of both sides we would be able to give sales ammunition to our readers no matter which side of the fence they found themselves on.

As we see it, neither side always represents the most economical methods of making printing purchases. The personality of the buyer, the salesman, and the plant all are factors in determining the best methods. But you can be sure of one

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Than Any

in 27 years!

Tieing in with the interest focused by the Graphics Arts Exposition of new equipment and supplies, manufacturers have placed more advertising lineage in this issue than in any since our Fortieth Anniversary number 'way back in 1923. The ads offer readers a preview of Exposition exhibits as well as a permanent reference to what is current in equipment and supplies.

See the Exposition if you can. Use the issue to enjoy it more, to get more from it. And, when you do attend, look for the folks of IP at booth 406. We'll be pleased to meet friends, old and new.

the plates in the future. And if there are tricky jobs to be handled, the "know how" acquired the first time through will offer chances for savings. Furthermore, if the customer has been using sizes which do not fit the printer's equipment it may be possible to redesign them for economical production. In extreme cases it may be possible for the printer to buy new presses which will handle certain parts of his client's printing to advantage. The printer will have nothing to lose and he will be protected by the assurance of a steady flow of orders for years to come.

However, if much new printing is included, it will take a lot of sales contact work, and somebody will have to pay for it. Unless the client has someone on his staff to guide and inspect the printing it can easily be

thing, every thinking buyer is looking for the most economical method of making his purchases. The printing salesman who can work out the best system for him, whether that be by handling the purchases on an account basis or by open competition, is the salesman who will get the business.

But in advocating the account method don't forget to stress the saving you intend to make by taking a large portion of the work off the shoulders of the buyer. And in fighting the account method in favor of open competition, don't forget the danger of giving any one printer an advantage over his competitors.

There is a lot to be said on both sides. A salesman should be familiar with arguments both ways, no matter which method he plugs.

Business-By-Blotter

GET YOUR SHARE



Here it is -- The Second Blotter --All Ready to get out and go to work for you

The wise printer tells his customer-world of his services and specialties. Don't make a secret of the talents and scope of your plant. Advertise! Blow your own horn—sweetly!

We make it easy for you through this series of sales-building blotters. To assure the power of repetition, the blotters have continuity of design and theme—"Time Flies—Advertise!" Their persuasiveness is due to quality achieved by experts in those fields.

This month's attractive blotter utilizes the same cuts as those on the first blotter, shown last month on page 55 of our July issue, with a change of copy and layout. There's still time for you to start mailing the series—to cash in on the effectiveness of regular mailings. It's first come—first served. If you are the

first subscriber in your locality to order the blotter or the series, you get exclusive use in your territory. Blotter as shown is under standard size.

Service to our readers is our aim. We haven't gone into the blotter business as an income-producing scheme; that's what you are to do with them. Costs are held as low as possible—the halftone is \$5.63; the zinc \$4.23—a total of \$9.86 for both, plus free use of topnotch copy and layout. Help us keep the price at rock-bottom by sending cash with your order for the blotters.

Start telling—and keep on telling—your prospects what you can do for them. Send in your order today and let us help you build your business by blotters. "Time flies" is no joke—it does exactly that. Don't let business logically yours fly by with it!

They're back again - The Inland Printer's Popular Sales-Building Blotters!

EUGENE ST. JOHN



the pressroom

Questions will also be answered by mail if accompanied by a stamped envelope. Answers will be kept confidential upon request

PRESSURE IS REQUIRED TO PRINT

We have a problem that has given us no end of trouble, and will be very grateful if you will lend us your help. We are a trade plant supplying machine composition to printers. The enclosed press proof demonstrates our difficulty. One printer thinks letters are up and down on slug and has made quite an issue of it. See lower case l in first line-several others in same line show up all right. This is definitely not due to cold face and doesn't happen to any separate character. It shows the same on just about any letter on different proofs. The cuts are mounted (tacked) on wood base. We have sent slugs to the composing machine manufacturer for checking and also the mats and are told slugs and mats are as perfect as can be made. What answer can we make?

The press proof is marked "Light impression — second overlay." The failure of the letters in the captions to print full strength obviously is due to insufficient pressure under impression. This in turn is due to bear off caused by greater pressure applied by the overlays on the cuts without compensating overlays on the type lines. In other words, the pressman in overlaying the cuts neglected to increase the impression on type as needed.

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When this press proof is held back up at the angle to the light customary when marking out on the back for type overlay, not the faintest sign of impression (embossment on back of sheet) can be seen. This is conclusive evidence of insufficient pressure on the type. Until the printer overlays the type lines and applies the pressure needed to print, he is not justified in finding fault with the machine composition.

However, in fairness to both parties to the controversy, if faulty letters appear in the proof after sufficient pressure to print has been applied, further test should be made by fracturing the slugs to ascertain whether they contain hollows, either immediately below the type face or lower in the slug. Of course, if the composing machine manufacturer went so far as to test representative slugs from this job by fractur-

ing to find hollows and found none, there would remain little ground for further argument.

One way to cope with the possibility of troublesome controversies such as this is to equip with a precision proof press and proof all composition with hard packing as the photoengraver of today proofs his plates. Then if letters print defective, the fracture test for hollow slugs may be made.

Causes of hollow slugs may lie in obstructions in throat and mouthpiece of the composing machine; defective pump; or incorrect metal temperature. Slugs which look all right but are hollow can be cast from cold metal by using high mouthpiece temperature. Another defect is a mouthpiece in which the holes have become enlarged so that the metal flows into the mold and chills before reaching the face. The metal should be squirted to the face for a solid slug.

SPECIAL FOLDER

We are seeking a small automatic folder to be used in the production of small specialty work. The size of the sheet runs from $2\frac{1}{2}$ by $3\frac{1}{4}$ to 3 by 5 and is folded once. Stock is 16-pound bond and embossed spiderweb tissue paper. Do you know where a folder of this type can be procured? Any aid you can give us will be appreciated.

Special folding machines are built for this kind of work on ordinary stock such as lightweight thin papers but an embossed spiderweb tissue is an exceptional stock for entirely automatic feeding even by an air suction feeder which can "pick them up and lay them down." You should submit samples of this tissue to the folder manufacturers.

TYPEWRITER RIBBON ATTACHMENT

"This letter was printed by letterpress through a moving ribbon." Please send information on this.

The letter was produced by means of a typewriter ribbon attachment on a platen press. This procedure affords letters of more uniform appearance than is possible to produce by printing through a piece of silk which is stationary.

SMUDGES ON GLOSS YELLOW

Enclosed is one of our publications upon which we have had a bit of a trouble. This particular customer is very meticulous and demands the best on his covers, for the publication is newsstand-distributed. Our problem is one of yellow ink. This job is printed two-color wet printing. The yellow is a gloss yellow (made by a reliable house), the black is very good halftone black, also of the best. If you will note the smut across the face of page one cover, you will start to get a picture of our problem. This smut is caused as the magazines slide off our gang stitcher or whenever several of these books rub together. Not all smut like the one enclosed. It seemed to occur at various times during the handling, as mentioned before, whether on the stitcher or in bundling whenever the books might slide one against the other. Rubbing the back cover against the yellow front cover will give you a better idea. We have had this trouble before whenever we used yellow but had thought it might be because we were binding too close to the press and the cover had not had sufficient time to dry. That is not the case in this particular issue. We eliminated the smudge this time by an over-all varnish. We then called in several ink men who told us that yellow ink has a tendency to do this very smudging when rubbing together and that no reliable ink company would guarantee to provide a yellow that wouldn't. The customer insists on using yellow from time to time. Is there any written authority stating that yellow will do this if not varnished? Or can yellow be printed satisfactorily in some manner without this problem arising?

The smudging shows not only on the yellow but also on the black and in two locations, first, close to the saddle stitch edge, and, second, at the opposite (outside) edge of page one of the cover. The trouble lies in the slow drying of the black halftone ink on the blank paper on page four, directly opposite the smudges at the inner and outer edges of page one after the cover is folded. The trouble caused by tardy drying may in part be due to makeready not thorough and complete, packing and drawsheet not hard enough, and excess supply of ink. The excess ink in itself would

retard drying. An incomplete makeready leads to use of excess ink. The ink without a high percentage of the best toner would have to be used in thicker film than a costlier ink with more of the better toner, the thicker film taking longer to dry.

The correctives are a faster drying halftone black of the non-rub type, scant rather than excess feed of ink by using an ink with the best toner, and the addition of enough carnauba wax to lend a slick finish to the halftone black which will not rub so easily, under the pressure of the contacting sheet in folding, in bundling, in stitching, and under the clamp of the paper-cutter when trimming. These ink correctives are easier applied to regular than wet inks, and further, more easily applied to inks for the two-color flatbed cylinder than for use on rotary presses.

You do not state the name of press used for wet printing of this cover so we cannot definitely say how you might find use of a heater and spray to advantage, or use heat-set ink. You may consult the inkmaker and the manufacturers of heaters and sprays to advantage because of their wide experience.

Years ago an able pressman of wide experience said that of all two-color jobs, he liked the combination of yellow and iron blue least of all because this blue rubbed easily and the smudge showed worst on the complementary yellow. How right he was is proved by the fact that today iron blue toners are not used in the better non-rub black halftone inks, only the best of organic blue toners being good enough for this purpose.

Your trouble does not lie in the yellow ink. The problem is to obtain a non-rub black for wet printing in two colors, which will dry harder and faster on the blank paper because it is the slow-drying ink on the blank paper which is being rubbed off during the finishing operations.

"SUNGLOW" INKS

A folder from Fishburn Printing Ink Company, Limited, of Watford, England, displays an entirely new development in high-gloss inks. They retain all the sparkle and luster in the dry print which they had when they came wet off the press. These inks are made to a modern formula with a synthetic base and may be superimposed in immediate sequence or after an interval of a few hours when dry. The makers recommend their own high-content anti-offset spray solution for use with "Sunglow" inks to avoid offset, and their own special reducer for these inks.

LAST CALL!

CONTEST DEADLINE NEAR

Hurry, hurry, hurry! Just a few more days to get your entry ready for THE INLAND PRINTER letterhead contest. Get yours on its way. Some contest letterheads will be on exhibit at our booth at the Big Exposition—a further incentive for speed. The jury of judges will consist of leading typographers. Entries must be postmarked by September 11 to be eligible for the nine awards.

FOLLOW THESE RULES:

- * Submit fifteen proofs in two colors, one of which may be black.

 Any color stock may be used.
- * Also, three proofs in black ink on white stock of each form separately. All copy must appear across top of 8½- by 11-inch sheet (regular letterhead size). Type and cast ornaments only to be used. No special drawings permitted.
- * Proofs must be mailed flat. Name and address must only appear on the back of one of the two-color designs.

COPY WHICH MUST BE USED IS AS FOLLOWS:

CALLAHAN PRINTING CO. NOT INC.

SPECIALIZING IN COMMERCIAL STATIONERY

BUTLER 3-4498

2345 N. MAIN STREET

ANYTOWN, U. S. A.

PRIZES ARE AS FOLLOWS:

* First prize, \$25; second prize, \$15; third prize, \$10; fourth prize, a two-year subscription to THE INLAND PRINTER. A six-month subscription to each of the five next-highest-ranking contestants. Duplicate prizes will be awarded in case of ties.

MAIL YOUR ENTRIES TO:

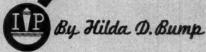
* CONTEST EDITOR, THE INLAND PRINTER, 309 WEST JACKSON BOULEVARD, CHICAGO 6, ILLINOIS

HURRY!



PROOFROOM PROBLEMS AND METHODS The Proofroom

ARE THE CONCERN OF THIS DEPARTMENT. QUERIES AND COMMENT WELCOME



AND SO FORTH

What is your objection to etc.? I notice that when it is used (rarely) in IP, it's always et cetera. I find this a handy abbreviation. You seem to shy away from it. It's perfectly proper, isn't it?

Etc. is an accepted abbreviation that appears in the best of company. We have a style rule against abbreviations—very few are permitted to lift their pretty little heads in this magazine. Ordinarily etc. and et cetera bespeak laziness. If a thing isn't worth specific mention, why hint at it?

Our friend Fowler says "to resort to &c. in sentences of a literary character is amateurish, slovenly, & incongruous . . . On the other hand, in the contexts to which it is appropriate, it is needless purism to restrict its sense to what the words could mean in Latin. . ." Read the rest of this in his "Modern English Usage." See if you aren't sold. He points out, incidentally, that "almost every man is potentially a purist & a sloven at once to persons looking at him from a lower & a higher position in the scale than his own." That's a comforting thought.

HOBBY OR AILMENT?

I proofread not in a plant but on a magazine, and I'm getting discouraged. Do you have any trouble with what seem to be professional seekers of errors? Thousands of people must make a hobby of pouncing on typos. My boss passes their letters on to me. Sometimes I have to write letters thanking them for their interest.

Every week the "letters to the editor" column of the Saturday Evening Post (not my magazine) contains letters of this variety. Recently a reader asked: "What do your readers do? Buy the Post to see how many errors they can find?" Then he goes on to tell about one he found. Can people reasonably expect perfection for their nickels and dimes? I have very little backing up from our plant readers. They've never been known to query continuity, for example, no matter how absurdly the meaning has gone awry. Am I alone in my misery?

Take it easy, kid. You are taking this thing too hard. Some of our best friends-by-mail have been acquired from the *nice* letters pointing out our shortcomings. They were goodhearted letters, all well meant and friendly. The other variety shows up once in a long while, but taking them is part of the game. And such criticism is helpful, even when it is bad medicine.

We found a little gem in the July 22 Post ourselves—"Quite so," Victoria said. W"e can't have jiggling." Are we going to write to them about it? Heaven forbid! We know how those things happen. Most people who write to us have a warm "family" feeling for our magazine. They chide us gently, as the mother tells a little one to wipe his nose. We like our letters. If you don't, perhaps you had better start acquiring a taste for them.

NOT QUARANTINED

I got a kick out of your item "Comes the Millennium" in the July Proof-room. Shortly after I read it, I saw this caption in the Chicago Tribune: "Howard T. East presenting plague to Admiral Richard L. Conolly aboard flagship." That must be a typo; it couldn't possibly be the Trib's fancy spelling. Trib style should be plak, anyhow.

Plague is a heck of a thing to be scattering around freely — it's against the law—so we will assume that plaque was intended. But let your laughter be gentle; the newspaper proofreader's lot is not an easy one.

Company's Coming!

On the two Friday afternoons of the Graphic Arts Exposition (September 15 and 22) IP's booth will be enhanced and enlivened by the presence of Mary D. Alexander, who edited the University of Chicago Manual of Style. Perhaps the Proofroom Editor will get time off for good behavior and be there, too. This is your invitation to drop by.

JUSTIFIED QUERY

In some book galleys I am reading I came across a reference to canaba wax. It looked suspicious to me and so I looked it up in the dictionary under c; then I tried k, without success. Can you tell me if canaba wax is correct? How do you check an item like this?

We would have followed the same procedure, as far as it goes, then looked up wax, where a number of different kinds of waxes are mentioned (not all kinds). The closest thing listed there to canaba is carnauba wax. Then we would write carnauba? in the margin, indicate canaba in the text, and leave it to the editor or author. If you felt that to be too little effort, then you might look for a special dictionary of terms used in the field of the book. There are many coined words used in every trade, profession, sport, industry, and so on, that are not included even in an unabridged dictionary. The proofreader doesn't have time to do etymological research in instances like this. (Canaba appears to come from a word meaning reed or cane, both of which appear unlikely sources of wax.)

FIGURES PRO AND CON

Could you give me a little help with figures? I have difficulty remembering when the numerals should be used and when the figures should be spelled out.

The answer to this problem depends almost entirely on whether the writing is formal and literary (not necessarily really literary), scientific and technical, or journalistic. The reasons are obvious: in newspaper and technical work, space is the consideration; with book and magazine material, the finished page looks better when figures are spelled out. There are numerous exceptions to the various rules-room and street numbers ordinarily call for figures, which also are used for proportion, percentage, degrees, and years. Large numbers often are expressed in figures (except round numbersunless they are money. See what we mean when we say it all depends?)

Many have the rule for ordinary matter: Spell out all numbers up to

and including one hundred; use figures for larger numbers. "When in doubt, spell out" is good procedure to follow with average editorial writing. Ages are always spelled out except in newspapers, where you probably would be fired at once for so heinous a crime. To us, age looks so stark when expressed in figures.

ANYHOW, IT'S FREE

Your column has always come up with such sound solutions to some of the bothersome problems confronting proofreaders that I wonder what your ruling on this example of double punctuation would be:

Send for free booklet. "What causes green mold?", a twenty-page booklet in full color, will answer your questions about molds and fungi.

Since this ad has already run and no one will get the guillotine for it, please let us know what punctuation, if any, should go after the title of the booklet.

Although dashes to set off the appositive or a rephrasing of the entire sentence might have solved the problem, space did not permit the use of dashes, and the client refused to make any changes in the copy.

What do your authorities say about the comma folowing the title?

The authorities would say that the punctuation is right. We, however, are firm believers in avoiding triple marks. Why not have the booklet title in italic? Then there should be sufficient space for dashes:

What causes green mold? — a twenty page booklet in full color will answer...

Or: What causes green mold? (a twenty-page booklet in full color) will answer...

Or: "What causes green mold?" (a twenty-page...) will answer...

There's more than one way to skin a cat.

COMME IL FAUT

This has nothing to do with where you put the comma, or grammar. Come to think of it—it has almost nothing to do with proofreading. All I want you to tell me is the difference in meaning between de rigeur and comme il faut. I say the phrases are not synonymous. What sayest thou?

We sayest that our French dictionary and our Yankee Webster spell it riqueur.

We have nine hours' credit in college French—a ten-hour course minus a one-hour credit subtracted for cuts. And the sole reason we have that much credit is that we were the only one in the class who had heard of Balzac, the teacher's pet. We give our background in order not to sail under false colors as an authority on the French language.

To cut it short: De rigueur means imperative, to comply with the best

form; comme il faut (as it should be), in good taste, correct from the standpoint of etiquette. It is possible that the required form might not be good form. Hence the phrases are not interchangeable.

ONE OR TWO?

I have trouble deciding when some words should be presented singly or as compounds: some day, someday; all ready, already, and such. How can I remember what is correct?

One harsh authority we have on hand says to "study your grammar until you understand the parts of speech; only by doing so can you read (proofread) intelligently."

We should say that the choice depends upon the meaning of the sentence, which should be obvious:

He will some day be president. I am going to California someday. He was a baldhead. He had a bald head. It has been some time since I have seen you. I will see you sometime soon. It is already finished. Are they all ready to go?

GONE WITH THE WIND

"When you are skiing down wind" should this be downwind, down-wind or down the wind?

Contact Mr. Webster. Under down there is the following: "Along the

same course with; as, down the wind ... Down often combines with the following noun (by dropping of the intervening article, to form adverbs and adjectives, as downwind.")

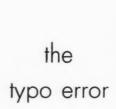
Take your choice. We prefer the downwind (easier and natural to say), as we prefer the fireplace to skiing in any kind of wind.

HYPHEN INDICATED

How do you mark typewritten manuscript when a word like *crisscross* is written with *criss*- at the end of one line and *cross* at the beginning of the next? You want to be sure the machine operator writes it as one word, not hyphenated.

Our comps would know that crisscross is one solid word. But that's an interesting question, and it is a matter that comes up occasionally. We might write out the full word and circle it in the margin alongside criss-, let's say. On special words, we use "close up" marks and give the hyphen a delete mark.

We have more trouble in the other department: denoting the hyphen we want retained. Even though we use the approved University of Chicage Press mark—a double hyphen with the slant line—still once in a while a word that should have the hyphen comes out solidly mated.



The typographical error is A slippery thing and sly; You can hunt it 'til your dizzy,

But somehow it will get by.
'Til the forms are off the
presses

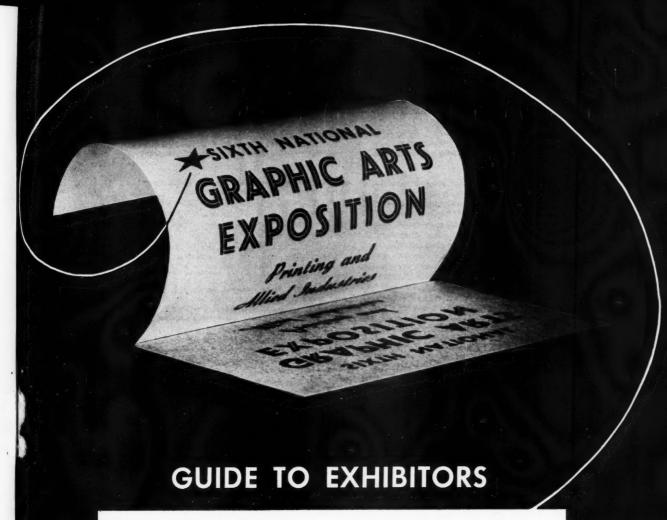
It is strange how still it keeps,

It shrinks down in a corner

And it never stirs or peeps. That typographical error, Too small for human eyes, 'Til the ink is on the paper, When it grows to mountain size.

The remainder of the issue May be clean as clean can be, But the typographical error Is the only thing you see!

Fleet Flashes



• Acme Steel Company. Booth 174. Stitching machines and wire. A. G. Denne will be in charge.

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American Evatype Corporation. Booth 403. Displaying the new American Evatype rubber plate molding press. Richard Evans, Sr., will be in charge.

 American Roller Company. Booth 175. Display of printing rollers, pastes, and adhesives. Hilliard Ditzler is in charge.

• American Type Founders. Booths 130-133; 244-260; 268-272. On exhibition will be four letterpress units, three Kellys, and a Little Giant; also five sheet-fed offset presses. An ATF Webendorfer web-fed offset press will be in operation. Displayed will be a complete photo-mechanical department including an ATF-Hadego photo-composition machine. ATF type faces and a new line of European type will be displayed. A facsimile engineering department will offer visitors a personal plant designing service. Frank Gerhart is staging the show.

Amsterdam Continental Types and Graphic Equipment Incorporated. Booths 144-147. Featured equipment will be Palatia Gravure Press, Ro-Fa Rotary Ruling and Folding Machine, Combinex Offset Layout Table and Printing Frame, Autovertikalie Automatic Focusing Vertical Camera, Dufa Flatbed Offset Press, and Rolca Roll-Ticket Press. Karel van der Eynden will be in charge.

 Anchor Chemical Company, Incorporated. Booth 208. Adhesives, ink removers, roller cleaners, and press lubricarts will be among the chemicals displayed. Edward S. and Alfred A. Jasser in charge.

Artype, Incorporated. Booth 297. Type and symbols on transparent self-adhering sheets will be displayed.

Robert Serafin will be in charge.

Robert Serafin will be in charge.

• Babcock Printing Press Corporation. Booth 149. The new Babcock Talisman Offset Press—a 19½ x 25½ inches sheet-fed single-color press will be displayed.

J. J. Babbo will be in charge.

• Banthin Engineering Company. Booth 160. Two Banthin 13 by 20 Horizontal Cylinder Presses in opcration will be exhibited. J. F. Banthin, Sr., and G. J. Stickley will be in charge.

• Battelle Memorial Institute. Booth 213. The XeroX Copier, samples of xeroprinting, hot-melt adhesive bindings, and other items will be displayed. J. Homer Winkler will have general charge of the exhibit.

e Russell Ernest Baum, Incorporated. Booths 203, 205, 207, 209, 211. The 30 by 46-60 Baumfolder, 25 by 38 Baumfolder, 22 by 28 Baumfolder, and the "Senior" 171/2 by 221/2 Baumfolder will be displayed; also the new "Junior" Model Baumfolders. Russell Ernest Baum will be in charge.

• Jack Beall Vertical Service. Booth 111. A complete line of accessories and rebuilt units for the Miehle Vertical Press will be exhibited. Jack Beall will be in charge.

Sam'l Bingham's Son Manufacturing Company.
 Booth 284. All latest developments in printers' rollers and some innovations will be exhibited. Don E. Crews in charge.

• Blatchford Division of National Lead Company.
Booth 357. Exhibit will feature three Blatchford products—"Honeycomb" base, type metals, and type metal flux. Robert F. Kielich in charge.

• Brackett Stripping Machine Company. Booth 218.

A Utility model single-head stripper and a jogger—shown in three sizes—will be displayed. H. J. Swenson and B. C. Blair will be in charge.

• Challenge Machinery Company. Booths 190, 192, and 193. Latest developments in the Challenge line of paper cutters, drills, proof presses, and quoins will be on display, as well as special equipment. J. Edgar Lee—and his staff—will be on hand.

• Chandler and Price Company. Booths 238-243. Printing presses and cutters will be on display. J. W. Kirkpatrick will have charge.

• Chemco Photoproducts Company, Incorporated.

Booths 288-290. Complete display of all of this company's photoengraving equipment. The "Flapjack"

THE INLAND PRINTER

FIRST PUBLICATION OF ALL THE PRINTING INDUSTRY



A. G. Denne Acme Steel Company



Thomas Darling Addressing M. & E. Co.



William G. Babina American Nebiolo Corp.



Frank Gerhart **American Type Founders**



Karel van der Eynder **Amsterdam Continental Types**



Alfred A. Jasser Anchor Chemical Compan



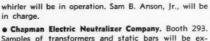
Orville Dutro Orville Dutro and Son. Inc.

Charles C. Doyle

J. E. Doyle Company

rge H. Charnock, Jr.

Craftsmen Line-up Table



- Samples of transformers and static bars will be ex hibited. Richard C. Payson and members of his staff will be in attendance.
- Cline Electric Manufacturing Company. Booth 156. Controller for the drive on job presses will be displayed. G. R. Dayton will be in charge.
- Commercial Controls Corporation. Booth 104. The Justowriter, an automatic justifying typewriter requiring only one manual typing, will be on exhibition. Frank DeWitt will be in charge.
- Consolidated Photo Engravers and Lithographers Equipment Company. Booths 426-429, 431 and 433. A complete temperature controlled darkroom will be displayed and Consolidated equipment shown in operation. Ben Sugarman will be in charge.
- e C. B. Cottrell and Sons Company. Booth "A." A new two-color sheet-fed rotary press and four plate treating machines will be exhibited. The Cottrell exhibit will be in charge of Carl C. Sweet.
- Craftsman Line-up Table Corporation. Booth 423. Three types of tables Standard, Photo-Lith and Utility Litho-Offset tables-will be exhibited. George H. Charnock, Jr., will be in charge.
- Dexter Folder Company. Booths 361, 363, 365, 367, 369; 381-396. Will display folders, stitchers, book and pamphlet binding machinery, including new machines used in the printshop and bindery.
- e j. E. Doyle Company. Booth 177. The new Doyle Automatic Infrared Dryer will be exhibited in operation. Charles C. Doyle, the company president, will be in charge.
- Orville Dutro and Son, Incorporated. Booth 171. Shown in operation will be the Speed-Flex Model D press and the Pearce sheet collator. Orville Dutro is in charge.
- · Electric Boat Company, Printing Machinery Division. Booths 418-421. The 22 by 34 E. B. CO press will be demonstrated in addition to samples of work run by shops owning the press. Harold Gegenheimer and other officials will be on hand.
- Electro-Coatings, Incorporated. Booth 115. Display shows uses of chromium plating in printing; sample chromium plated etched steel rotogravure cylinders; chromium-plated etched magnesium cylinders; chromium plating as applied to electrotypes, stereotypes, embossing dies and engraving dies. Also shown is application of chromium plating as salvage medium for cylinder journals. William J. Suski in charge.
- Electrographic Corporation, Lake Shore and Reilly Electrotype Divisions. Booths 198-199. New electrotype platemaking methods-including pressmen making overlays, men operating Bishop Treating dies, and the actual shaving of plates-will be shown; actual pressruns will be made from completed plates. A slide film on the manufacture of Reilly Electrotypes will be shown, as well as a complete display of the corporation's products. Cliff DeVore in charge.
- Fairchild Camera and Instrument Corporation. Booth 165. The Fairchild Photo-Electric Engraver and the Fairchild Lithotype will be exhibited. Robert McPher-

son, Edward Tracht, Harry Ellis, Jr., C. A. Harrison, and Alfred Scott will be in attendance.

- William A. Force and Company. Booth 439. A complete showing of numbering equipment for printers will be displayed. William A. Force III will be in charge.
- General Binding Corporation. Booth 306. Exhibition of plastic binding equipment and mechanical bindings will be featured. William L. Fritz will be in charge of the demonstrations.
- · Goss Printing Press Company. Booth 312. Magazines, books and supplements printed on Goss presses and a miniature model of the Goss Headliner Presses will be shown. Paul Florian will be in charge of the Goss exhibit.
- e Graphic Arts International Corporation, Booth 142. Latest models of the Jagenberg gluing and labeling machines will be displayed. Holger F. Riis will be In charge of the booth.
- Hamilton Manufacturing Company. Booths 405, 407, 409-410. Progressive imposing tables, three- and fourtier galley cabinets, artwork storage cabinet, a truck for galley cabinets and an island makeup unit will be exhibited. Roger L. Perry will be in charge.
- Hamilton Tool Company. Booths 141 and 143. On display and in operation will be a 17 by 26 Rubber Plate Press, two numbering machines, a cross perforator, two punching machines, and a length slitter and perforator with roll rewinding and cutoff delivery.
- Hammermill Paper Company. Booth 341. A display designed to help printers choose the right grade of paper for maximum customer satisfaction and profitable pressroom performance.
- Hammond Machinery Builders. Booths 310 and 311. Hammond TrimOsaws, radial routers, router-planers, full-page shavers, scorchers and EasyKasters will be exhibited. A. T. VanderLinde will be in charge.
- Harris-Seybold Company. Booths 264 through 267. Exhibited will be Harris printing presses and Seybold paper cutting machines and bindery equipment, plus allied equipment and supplies for the Graphic Arts Industry. Ren R. Perry, general sales manager, will be in general charge.
- Huebner Laboratories. Booth 222. Displayed will be a Straight Line Image Reverser, Right Angle Image Reverser, Straight Line Image Reversing Lenses, Monochromatic Illuminator for Color Separations, Magne sium Metal Engravings, examples of color printing and enlarged photographs of the Onset press and Phototextype composing machine. W. C. Huebner in charge.
- Ideal Roller and Manufacturing Company. Booth 359. Products on display will be Rocket, Durolith, Synthox, DX Newspaper, OX Process Rollers, Molded Goods, Rubber Plates and Adhesives. C. W. Gleason and Arthur E. Murphy will be in charge.
- Intertype Corporation, Booth 261. On exhibition will be the "Fotosetter" machine and an Intertype Model G, 72-90 combination Mixer hot metal machine. Intertype personnel will be on duty at all times to furnish information desired.
- Kidder Press Company, Incorporated. Booth 330. Kidder printing machinery will be on display. Robert B. King will be in charge.



Robert Serafin Artype Incorporated



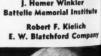
J. J. Babbo **Babcock Printing Press**



G. J. Stickley **Banthin Engineering Company**



J. Homer Winkler







Lester A. Neumann

Chicago Typographers Assn.



Sam Anson



Richard C. Payson



B. C. Blair



Haro Electr



Roberts

I. A. E

Carl

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Harold Gegenheimer **Electric Boat Company**



William J. Suski **Electrographic Corporation** Electro-Coatings, Inc.



Cliff DeVore

William A. Force III William A. Force & Company General Binding Corporation

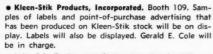


William L. Fritz



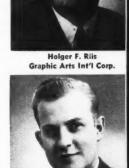
Paul Florian **Goss Printing Press Company**





- Lake Erie Engineering Corporation. Booths 152 and 154. Among the displays will be two Acraplate Molding and Vulcanizing presses, together with auxiliary equipment. I. V. Landau will be in charge.
- Lanston Monotype Machine Company. Booths 411-417. Monotype keyboard, composition caster. Giant Caster, Material Maker and Monotype-Thompson typecaster will be features of letterpress equipment. Also on display will be Monotype-Huebner color precision camera, precision photo-composing machine, register device, vertical plate coater and universal process machine as well as the Monotype-Barrett adding machine. Carl Sorenson will be in charge.
- E. P. Lawson Company, Incorporated. Booths 351, 353, and 355. Working demonstrations of the new series 39-inch Heavy Duty Automatic Clamp Cutter, 46-inch and 52-inch Heavy Duty Hydraulic Clamp Cutters and the Electronic Spacer Cutter. The Heavy Duty Drill Slotting Machine will also be exhibited. D. W. Schulkind, company president, will be in charge.
- e Linotype Parts Company, Incorporated, Booth 425. Model E Star Automatic Quadding Attachment will be shown in operation. Emil Bendow will be in charge.
- Ludiow Typograph Company. Booth 283. A practical working exhibit of Ludlow and Elrod equipment under as near shop conditions as possible will be made. John King will be in charge.
- Macbeth Arc Lamp Company. Booth 436. The company will exhibit models of Photographic Arc Lamps to demonstrate the traditional and two styles of the ultramodern electronic motor-controlled lamps. Iredell Eachus, Sr., Iredell Eachus, Jr., and Jesse D. Hass will be in charge.
- J. Curry Mendes Corporation. Booths 285-286. Exhibited will be the JCM Semi-automatic Collating and Tipping Machine; a brand-new completely automatic collating machine: and the Stakart, a rack of five double-tiered shelves for storing and transporting paper stock. J. Curry Mendes will be in charge.
- Mergenthaler Linotype Company. Booth 282. On display will the latest Linotype equipment available. J. L. Davis, William Mulroy and W. L. Bartlett are in charge.
- Miehle Printing Press and Manufacturing Company. Booths 273-277. Five presses, ranging from the V-50 Vertical to the Number 61 Two-Color Sheet-Fed Offset, will be displayed. The exhibit will be conducted under the direction of Carleton Mellick.
- Miller Printing Machinery Company. Booths 278-281. Displayed will be the company's high-speed automatic printing machinery. A. E. Searle, Jr., will be in charge.
- New Era Manufacturing Company. Booth 343. Equipment on display will be a New Era Press upper-print unit, a Graeber Stringer and Knotter, and a Lockwood Press. Also displayed will be samples of printed work done by New Era presses and enlarged photographs of specialty presses. H. C. Lockwood in charge.

- Monomelt Company, Incorporated. Booth 180. Display will present Monomelt metal feeder, the new rotary shaver and the new power shear among products developed and manufactured by the company.
- Mohr Lino-Saw Company. Booth 113. The Mohr Saw for attachment to the Linotype or Intertype and the Portable Mohr Saw will be displayed, H. O. Mohr in charge.
- Northwest Paper Company. Booth 331. Original paintings of the famous Northwest Mountie, paper samples and printed specimens will be displayed. John T. Harrison will be in charge.
- NuArc Company. Booth 112. On exhibit will be the new N-110 motor-driven, completely automatic Arc Lamp. J. H. Schultheis will demonstrate.
- Nygren-Dahly Company. Booth 342. Displayed will be single and multiple paper drilling machines, perforators and punch and tab cutting machines. Among the new models is a 22-inch combination round-hole and slot-hole rotary perforator. Henry C. Nygren will be in charge.
- Oxy-Dry Sprayer Corporation. Booths 233 and 235. Oxy-Dry anti-offset spray equipment features two new developments: a "position powder control" micrometer device and a more efficient powder. The recently developed Bista overlay method of pre-makeready will also be shown. Paul Rosewall is in charge.
- Paasche Airbrush Company. Booth 126. Complete line of "No-Offset" Fluid units. "No-Offset" Powder units, and "No-Offset" Dual Combination Fluid and Powder units, applying both fluid and powder at the same time or separately, will be exhibited.
- Printing Machinery Company, Booths 379-380, Featured in the display will be the company's new magnesium Sterling Toggle Base and the various types of its flatbed and rotary plate mounting and registering bases. Lee Augustine will be in charge,
- Printrade Machinery Corporation. Booths 164 and 166. The Soldans Bronzemaster will be displayed. John G. Gould in charge.
- Process Color Plate Company Incorporated. Booth 309. On exhibit will be samples of all types of printing. Gradie Oakes will be in charge.
- Rapid Roller Company. Booth 354. Various types of rollers and Mercury Lithographic Blankets will be displayed, also a cabinet showing the various stages of the company's manufacturing processes.
- Rathbun and Bird Company, Incorporated. Booth 214. Main exhibit will be the company's extension delivery for cylinder presses. Carl J. Bergstrom will be in charge
- . J. A. Richards Company. Booth 371. Saw trimmers, diemaking equipment, stereotype equipment and Model EMM jig and drill mortising unit will be among the many items of equipment on display. Paul Richards will be in charge; J. A. Richards, Sr., will also be on hand.
- Roberts Numbering Machine Company. Booth 158. Products to be shown will be Rotary and Flat-Bed Typographic Numbering Machines; Hand Numbering Machines duplicating the type faces. George A. Seaver will be in charge.
- · Roberts and Porter Incorporated, Booth 328. The modern method of lithographic press dampener build-



Roger L. Perry Hamilton Manufacturing Co.



Hammond Machinery Builders



Harris-Seybold Company

William C. Huebner **Huebner Laboratories**



Carl Sorensen

Lanston Monotype Machine



J. V. Landau



Robert B. King

Kidder Press Company



Roy T. Hyre, Sr.

Hyre Electric Company



George A. Seaver Roberts Numbering Machine

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Paul A. Richards I. A. Richards Company



Carl J. Bergstrom Rathbun & Bird Company



Gradie Oakes Process Color Plate Co. John G. Gould Printrade Machinery Corp.



Joseph Van Cata R. R. Robertson Company



F. P. Rosback Company



Harry W. Knoll H. B. Rouse and Company



C. H. Kinzel, Ir Seal-O-Matic Mach. Mfg.



Arthur J. Hatch, Jr. Strong Electric Corp.



Frank H. Galway Super Speed Prtg. Press



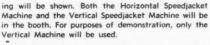
Anthony Saraceni B. Verner & Co. Inc.

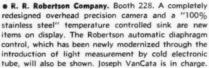
E. O. Vandercook

Vandercook & Sons, Inc.

Basil M. Parsi

Thomson-National Press Co.





- F. P. Rostack Company. Booths 225-227 and 229. Featured at the Rosback display will be the new Rosback Pony Vari Speed Rotary Perforator, "Twenty-Two" Rotary Slat Perforator, and other types of Ros-back Perforators, Punching Machines and Wire Stitching Machines. F. C. Roosevelt will be in charge.
- . H. B. Rouse and Company. Booth 219. Featured in the display will be the new Rouse Plate Saw, also a line of Vertical Miterers and Regular Rouse Band Saw for cutting line-casting slugs, as well as a full line of printers' small tools. Harry W. Knoll will be in charge.
- E, G. Ryan and Company. Booth 375. The Toland Colloid Plate for lithographic processes, and the Ryco "Black" photographic light for exposing zinc and colloid plates will be demonstrated. The booth will also include the Ryco Ink Roller Washup Attachment, Ortleb Ink Agitator, Ortman Dry No-offset Spray and the Tally-Tab, among its offset exhibits.
- Schaefer Machine Company. Booth 370. Exhibit will include several types of newly designed coating ma-chines, patented in 1950, for gluing, cementing and gumming paper, cardboard, book cloth, leather and leatherette. Charles F. Schaefer will be in attendance.
- · Seal-O-Matic Machine Manufacturing Company, Incorporated. Booth 432. Two Seal-O-Matic Sealing Machines will be in operation during the Exposition. C. H. Kinzel, Jr. will be in charge.
- Screen Process Printing Association, International. Booths 314 and 316. On exhibit will be specimens of the many applications of commercial silk screen work, including recent developments in the field where printers and lithographers are using silk screen process in conjunction with their work.
- Southworth Machine Company, Booth 151. Displays and photos of the company's paper conditioners, humidifiers, punching, round cornering, and paper jogging machines, hangers and various special equipment will
- Spiral Binding Company, Incorporated. Booth 200. The exhibit will include the firm's Universal Punching Machine, SB6 Automatic Spiral Inserting Machine, Sample books of various binding styles of Spiral, Spiralastic and Kamket loose-leaf binding.
- Strong Electric Corporation. Booth 292. Shown at the booth will be Type 32500, 140 Ampere Vertical Printing Frame Lamp; Type 32000 Grafarc Camera Lamp; and Type 32520, 140 Ampere Horizontal Frame Printing Lamp. Arthur J. Hatch, Jr., will be one of the
- Super Speed Printing Press Company, Incorporated. Booths 318-327, and 340. Demonstration will be on

Heidelberg platen presses exclusively, showing a battery of machines at various speeds. Frank H. Galway will be in charge.

- Taylor Machine Company, Booth 379. The Taylor Registerscope, a modern device which adapts optical principles to speed up form make-up and register, and Registerscope Junior, a low-cost model, will be displayed. Arthur K. Taylor will be in charge.
- Thomson-National Press Company. Booth 438. In operation at the booth will be a 17 by 25 Thomson Heavy Duty Automatic Cutting and Creasing Press, a Style 9-6, 28 by 41 Thomson Heavy Duty Eccentric Action Cutting and Creasing Press, and a Style 6, 28 by 41 Thomson Crank Action Cutting and Creasing Press. Basil M. Parsons and L. A. Whittaker will be in attendance.
- Vandercook and Sons, Incorporated. Booths 262-263. Demonstrated will be the new Vandercook Plate Gauges, Make-Up Gauge, Line-Up Gauge, Block Leveller and Test Press, the 4-Color High Speed Proof Press, 29-24 High Speed Power Proof Press and other equipment. A complete "Pre-Press Department" such might be installed in a modern plant will be one of the features. E. O. Vandercook will be present.
- B. Verner and Company, Incorporated, Booth 408. The company's latest model Multipress will be exhibited at the Exposition. There will be two machines in operation. Anthony Saraceni will be in charge
- Walton Laboratories, Incorporated. Booths 194-195. Walton Laboratories will have in operation many of the various models that comprise the Walton Humidification System, one being the new Walton Model "30" Humidifier. William Feldermann will be in attendance
- Martin J. Weber Studio. Booth 397. Graphic arts pictorial production for letterpress, offset and grayure produced by photo-mechanical means through the Weber Process will be on display. Techniques will be displayed and explained. Martin I. Weber will be in
- Western Newspaper Union. Booths 345, 347 and 349. Western Newspaper Union and Associated Companies will display a variety of equipment of wellknown manufacturers.
- Wetter Numbering Machine Company. Booth 333. The feature attraction of the booth will be the enlarged model of a Wetter machine made out of plastic and so made as to give the visitor an opportunity to see how the inside parts function. On display also will be a rotary model several times above scale in operation. James Longshore will be in charge.
- Wild and Stevens, Incorporated. Booth 191. The Sesco low-pressure offset gun will be featured at this display. Pedestal and press-mounted units and new conversion heads for old equipment will be shown. William J. Leahy will be in charge.
- Williamson and Company. Booth 374. Feature of the exhibit will be the 185 ton "Platemaster" press. The company will also exhibit various materials used in the production of duplicate printing plates of rubber and plastic for letterpress work. The molding of rubber plates will be demonstrated. Eugene Williamson, company president, will be in charge.



D. W. Schulkind E. P. Lawson Company



Emil Bendow Linotype Parts Company



Wade E. Griswold Lithographic Tech. Found



J. Curry Mendes J. Curry Mendes Corporation



Lee Augustine

Printing Machinery Company

E. O. Corkett Henry C. Nygren Pictorial Machinery Ltd. Nygren-Dahly Company



John T. Harrison Northwest Paper Company



Kenneth J. Moore Kenneth I. Moore and Co.



Hobson F. Miller A. E. Searle, Jr. Miller-Lauffer Print. Equipt. Miller Printing Equipt. Co.





COFFSET M

The Four Types of Offset Plates

By Charles 7. King

● This month this department is going to step completely out of character and any reference to troubles current or past will be purely coincidental. Instead, the central theme will be the progress lithography has made in recent years, and to pay tribute to the men who have been able to readjust their thinking and craftmanship to the rapid changes which have taken place in this industry.

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F. Miller

When one considers that many of the top-notch lithographers learned their trade on stone and have been able to adapt themselves to the use of metal plates on rotary presses, and have been able to switch from handtransfer to completely photomechanical methods of platemaking, one is forced to realize that the training they received must have been of such a fundamental nature that its principles could be applied no matter what changes were made in the means of applying these principles. Likewise, the thousands of men who have come into the industry in the past few years have contributed much to the industry simply because they were not afraid to try things which to someone more experienced appeared impossible or ridiculous.

Should Be Science-Not Art

Had it not been for both types of operators the new developments and discoveries which have been made in the past few years never would have become standard practice, and the growth of offset lithography would have been very limited. To appreciate how great this transition has been one only needs to look at the letterpress industry in which many men are still running presses identical with the ones on which they learned their trade and differ only slightly from those their fathers and perhaps their grandfathers ran at the turn of the century.

Along with this transition of the lithographic process there has come the demand to remove it from the category of an art and make it a science. This apparently originated

from the idea that since water and other chemicals were used, (a laundry advertising that it used no chemicals was once sued for using water. which the judge ruled is a chemical) chemists should be able to discover the function of the various materials used by operators and improve on existing methods. Although much work has been done in technical fields and especially those related to the lithographic industry, there is still very little scientific knowledge of the principles of lithography, and although there have been some great strides made in attempts to control and standardize the materials used. the artisan is still a very important factor in the quality of the job.

Great Strides in Photography

Scientifically, the greatest strides appear to have been made in the realm of photography, and much of the ease of reproduction and the improvement in quality of offset printing has been the direct result of improvements made in photographic equipment and supplies. It is hard to realize that at one time an apprentice cameraman's principal task was coating wet plates with collodion, and that only a few years ago high contrast emulsions and developers, as we know them, were not available.

Yet credit must also be given the cameramen. They have been very quick to adopt any means of improving the quality of their work and have readily adopted methods of standardizing their operations wherever possible. They have realized the importance of accuracy in measuring, weighing, and timing, and appreciated the value of instruments such as integrating light meters and densitometers in the reproduction of uniform transparencies. In general, it can be said that they have been furnished with accurate information and equipment and they have attempted to give accurate reproduction through the use of them. This has, however, in no way detracted from the artistic element of their skill, but instead has aided them in attaining a much higher degree of artistry than heretofore possible.

Undoubtedly the chief reason such great strides have been made in the photographic phase of the process is that the suppliers of photographic materials have at their command well organized research staffs for work in other phases of photography than that concerned with the graphic arts. However, many of the principles with which they are familiar are identical no matter whether they are to be put to use in the field of amateur photography, moving pictures, lithography, or photoengraving. So there has come about not only the use of color photography in all kinds of reproduction, and with it more completely photographic means of color correction, not only for use with color photos but also with hand produced art.

In addition these companies have put forth considerable research effort on problems specificially peculiar to lithographic and letterpress reproduction. It can be safely stated that at one time in recent years one supplier paid for far more man-hours of graphic arts reasearch work than were paid for by the entire lithographic industry during any comparable period. Thus photographic and color-correction departments of the lithographic industry have progressed much faster than all other parts, and for the most part it has been progress based on scientific findings and controls.

The Hand Transfer Plate

The progress of platemaking has been on a much less sound foundation. Some of the improvement has been the inevitable result of the improvement in positives and negatives but full advantage has not been taken of these blessings because so much of the platemaking process is based on disputable ideas of what takes place during the operation. For purposes of discussion, lithographic plates can be divided into

four classes: hand-transfer, albumin, deep-etch, and multi-metal. The first three of these types of plates may be either zinc or aluminum.

Although for most commercial purposes the hand-transfer plate has become obsolete, its counterpart in the form of the duplicator plate on which the text matter is typewritten directly onto the press plate finds wide application on the small office type equipment. For all those latecomers to the industry who have never had any experience with handtransferring, the process consists of pulling prints from an original stone or metal plate onto a special type of paper and with a special grade of "transfer" ink. These prints are then placed in proper position face down on a zinc or aluminum press plate and under extreme pressure the ink on the plate is transferred to the plate. The paper is then soaked off and the plate is rolled up wet to strengthen the image areas before desensitizing the non-image areas and gumming the plate.

Difficulties With Albumin

Fundamentally, this is the simplest kind of lithographic plate that can be made, and there are many who will still claim that, from a press performance viewpoint, it is far superior to the more recently developed types of plates. The theory on which the hand-transfer artist worked was that prior to putting down the transfer, he made the metal grease receptive through the use of a counter-etch. This treatment was responsible for the greasy transfer ink on the print producing an image on the plate. The etch he used after the plate had been rolled up not only desensitized the non-work areas but could also be made in such a manner or of such strength that tone values could be reduced. If he wished to add work he could counter-etch the area and through the use of a greasy crayon he could put in any hand work he needed. Altogether he knew the process thoroughly and if something went wrong there were only a few causes to which the trouble could be attributed. Actually the method was merely the same operations he had been accustomed to using on stone, applied to a grained zinc or aluminum plate.

With the introduction of the albumin method of making press plates, the complications set in. In the first place, little was known about the reaction which took place between the albumin and the ammonium dichromate when the dried mixture on the plate was exposed to light.

Furthermore, egg albumin itself is an irregular product about which too much is not even known today, and different lots from various sources vary greatly in composition or at least in their ability to work well in the lithographic process. The platemaker was now working with a process which neither he nor any one else understood and with materials of doubtful composition. As a result many pet theories sprang into being concerning the correct amount of albumin and dichromate which should be used, how best to prepare a coating solution, what kind or strength of etch should be used, what grade of albumin would work best, and proper technique to be used in developing a plate.

As one of its early projects, the Lithographic Technical Foundation set out to investigate the albumin process, and although few of its early findings could be considered to be of a fundamental nature, it at least prescribed a method of preparing coating, timing exposures, developing, and finishing plates that would work. Many thousands of good plates have been produced by this method but it did not correct all of the troubles which can be encountered. In fact it did not cure as many ills as it could have, for a number of reasons.

In some shops which have begun producing albumin plates since the original publication of the Foundation's Bulletin Number 6, and who had men with no previous experience, the recommendations in this bulletin have been followed to the letter and they have been unusually successful. But in many shops where there were platemakers who had their own ideas of how to prepare solutions, develop plates, and perform the other operations that are required, the method has often failed.

Reasons for Failure

This failure has at times been due to the operator's failure to understand the instructions as given in the literature. Sometimes this failure to understand was due to the semi-technical manner in which the instructions were given, while in other cases it was because even though the operator read the printed words he interpreted them in the terms of the way in which he was then working. There have been operators who selected just the parts of the method which appealed to them and attempted to work them in with their own ideas, while others have said straight out, "That is just some of that theoretical stuff. It may work in a laboratory, but I am a practical lithographer and not interested in theory. I make my plates the way I want to and most of them are good plates if I do say so myself. If they don't work, it's because the pressmen don't want them to."

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Some Are Good-Some Are Bad

One of the surprising things is that both platemakers who follow the method of the Foundation exactly and those who prefer to stick to their own methods can consistently produce good plates. There are stories in circulation about plates which have run as high as a half-million impressions without trouble. Some plants are known to regularly run editions well over the hundred-thousand mark from albumin plates. Others whose work consists of short editions seldom if ever have any trouble. Yet there are some shops which are constantly complaining about scum, work walking off the plate, fill-in, and countless other difficulties. In recent years much of the L. T. F.'s research effort has been spent in attempting to find means of circumventing these difficulties.

Many shops have completely eliminated the use of the albumin process and make all of their plates by the deep-etch method simply because they were not able to depend on the quality of the albumin plates they had been using. Now the deep-etch process is far more complex than the albumin and its operation far less well understood. Here again the light-sensitive coating is composed of a natural product of doubtful composition and ammonium dichromate. Once again the reaction between these two when exposed to light is a matter of conjecture, and so, for that matter, is the action of the developer. In this process, however, there have been fewer preconceived ideas of what to do and what not to do and what to use and what not than there were with the earlier process. Perhaps this is due to the Foundation's early entrance into the picture with complete instructions for preparing materials and methods of controlling them, or perhaps it was due to manufacturers of proprietary products furnishing complete instructions for the use of their products. Both possibly had some effect. Nevertheless, much the same condition exists in the quality of deep-etch plates as exists with albumin. Some shops can go for years and never make over a plate, while others will find it necessary to allow for a certain percentage of their plates being no good. Causes of this disparity should be found.

Although the theory of the production of the deep-etch plate might not be too well understood, once the plate is made, and made correctly, it should be identical in every respect to one made by the hand-transfer method. This should mean that it would run until there is no longer any grain left to carry the water. This would mean that the determining factor in plate life would be the roller and blanket pressure and slippage, and the strength of the fountain water. Since aluminum is more abrasion-resistant than zinc and less readily attacked by the fountain water acid of the correct strength to keep the plate clean, the reason why many shops with long runs prefer aluminum becomes apparent. But the greatest number of complaints about spoilage of deep-etch plates do not indicate that they have been run until the grain has become abraded away. They seem to stem from other causes. Seldom does one hear a complaint about a plate which gave trouble after one hundred fifty thousand impressions. Generally the troubles seem to be with short runs.

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The old hand-transfer platemaker knew that the plate he made should run until the grain wore off. If it did not (and was not damaged by poor pressmanship) he knew that it was because the plate was not properly sensitized (counter-etched) to receive the greasy image or not correctly desensitized (etched) to hold water. If one school of thought is correct, much the same principle can be applied to the operation of the albumin process. Some believe that in printing from an albumin plate the film of light-hardened albumin becomes a lithographic base which takes ink, whereas others believe the film to be porous and that the greasy image is in direct contact with the plate as in the case of a transfer plate. In either case the most generally accepted reason why plates go blind is that the albumin swells and either releases the ink in a manner similar to that in which gum releases the ink in the non-image areas. or that swollen albumin prevents the penetration of the ink to the metal by reducing the porosity.

New Process—Same Theory

Albumin platemakers who have come up from the ranks of transfer artists have on numerous occasions been seen to rub-up a weak place in an albumin image with pumice powder and rolling-up ink in exactly the same manner that they had used to strengthen a weak image on a transfer plate. (Rubbing-up a plate in

this manner is an art and is not recommended as a standard practice. It is much easier to ruin a plate by this method than it is to save it.) Here the same theory was being applied to the newer process; namely, that it was necessary to get the greasy ink into contact with clean metal. Often these rubbed-up spots have run better on the press than the balance of the plate.

In the deep-etch process, too, the same theory will work but much of the time it is not permitted to do so. Instead of a greasy substance such as developing ink or transfer ink being placed in contact with the freshly counter-etched surface of the plate, a film of lacquer is put down first. How the use of lacquer became

part of the process is rather hard to understand unless it was because one of the early processes developed in England called for the use of shellac. It is just possible that these early investigators found the use of shellac necessary in the repeated production of good plates since shellac would have the ability to remove any residual moisture which might remain on the plate and at the same time deposit a resinous film which would take ink. Thus it would play a role similar to the special moisture-removing lacquer developed by the Foundation for use when water instead of alcohol is used in removing the deep-etching solution from the plate. However, when the greater part of the English process was

Louis Marini

ANOTHER IN OUR SERIES OF TOPFLIGHT CRAFTSMEN

Louis Marini, advertising printer and designer, was born in Paris, France. At the allegedly tender age of four his parents took Louis to Quincy, Massachusetts, where he liked everything so much that he has lived there since. After grade and high school, he went to work at the Quincy Telegram, a small newspaper where he set type, wrote advertising copy, headlines, and even editorials. Mr. Marini became his family's breadwinner at an early age, upon the death of his father. He worked in Boston for some ten years and then went to the Lawrence Press, where he worked on advertisements as well as commercial printing. He also attended Wentworth Institute in Boston, where his love for typography really developed. "After that I became absorbed in type. paper, and ink," he recalls. "I studied at Boston University and also took some special courses under Professor Rogers at the Massachusetts Institute of Technology which were very helpful.

"Having ideas of my own, I was not satisfied to work for others, so twelve years ago my partner, Charles O. Shaw, and I decided that we might as well try it on our own. Since then we have operated the Colmar Press and, while we have not become rich, we have a good reputation as printers."



Mr. Marini does some solo singing at the First Presbyterian Church in Quincy and also sings in the Wollaston Glee Club, a male singing organization of ninety voices. Robert Merrill and other well-known singers appear on this club's concert programs. Mr. Marini contributes an occasional editorial to the Quincy Patriot Ledger and is an elder of his church. He was for eight years secretary of the Quincy Church Attendance Council, an interdenominational group which was written up recently in Reader's Digest.

"I have no desire to pontificate," writes Mr. Marini, "but if a young fellow will develop a real love for his craft and work hard at it, he can become a good printer. I would say good taste and close attention to detail as well as a flair for style will get him there."

copied in this country, this function of the shellac was not appreciated and instead a film which was more waterproof was recommended.

To some of the converted handtransfer platemakers the use of lacquer was rank heresy and, instead, they preferred to use their regular greasy washout asphaltum solution. To them if a plate would not hold an image with asphaltum it was a positive indication that the metal was not sensitive when the asphaltum was applied, and there was something wrong with the previous operations. Thousands of good deepetched plates have been made in this manner, and when they were made properly they were as indestructible as a hand-transfer plate.

There is no intention in this discussion to imply that all good handtransfer platemakers have turned out to be good albumin and deep-etch platemakers or that all good photomechanical platemakers were former hand-transferers. This is far from true. Many of the best platemakers in the business today could not make a hand transfer if their job or even their life depended on it and many a man who could pull beautiful transfers has been a complete failure at making other types of plates. The intention here is to show that it is possible to change from one method to another simply through an understanding of an underlying fundamental principle. Undoubtedly many purely photomechanical operators also either knowingly or unknowingly base their deductions on this same principle but questions asked and statements made at clinics, open forum discussions, in private conversations, and in questions and answer columns in the trade press indicate that many platemakers never seem to think in terms of grease-receptive and waterreceptive metal.

Research Still Necessary

Perhaps the discussion so far sounds like an oversimplification of the platemaking techniques. However, the processes would undoubtedly be found far more simple if more thoroughly understood. Until recently most of the research work in the field of platemaking has been directed towards the production of new and improved processes or products which would tend to eliminate the troubles which the less skilled operators constantly encounter. Perhaps a better approach would be to attempt to find out why many craftsmen can consistently make good plates. Of course the other approach should be to establish as many facts concerning the materials and methods now in use, and find out how they affect the operation of the process.

The L.T.F. should be highly commended for the project it has undertaken in attempting to obtain such information through the use of radioactive isotopes furnished by the Atomic Energy Commission. Altogether, there has been far too little research effort of this caliber directed toward improving the understanding of platemaking operations. Merely attempting to duplicate shop conditions in a laboratory may be a means of finding out many things,

but in a process which has as many variables not only in the materials used and the method itself, but also in the applications to which it is forced to accommodate itself, such research is completely inadequate. Tribute should therefore be paid to the artist-platemakers who have consistently made good plates backed only by meager knowledge of the fundamentals involved.

The picture in the pressroom is in some ways similar to that in the platemaking department, but in other ways it is considerably different. Equipment makers have spent (Continued on second page following.)

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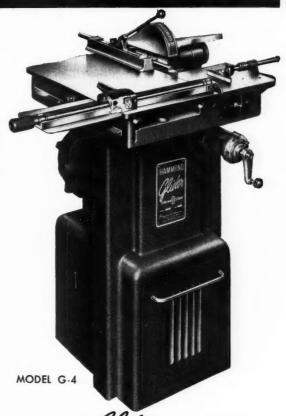
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filling the form with "dutchman" to make the form lift. A Hammond TrimOsaw will saw your slugs, material and plates ACCURATE and SQUARE for fast make-up.

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many dollars in perfecting the offset press but aside from the difference in speed between the original models and the latest developments there is very little fundamental difference. Supplies have been greatly improved.

When one considers that the oldtime pressman could produce a creditable job with paper of questionable stability, fountain acid of his own concection, and inks which he doctored to suit his fancy, it would appear that his job should be simple and he could spend all his time adjusting the press for perfect reproduction. Anyone who has ever tried to run a press knows that this is a

far from adequate description of press operation. In the first place, there is the question of the quality of the plates which must be used. As seen from the foregoing description of platemaking, it is obvious that many pressmen have no assurance that the plate which they so carefully "mike" and pack will run well even at the start of the run. Ofttimes it is only the artistry of the pressman which makes it possible to finish the run, and a good pressman can do much not only to help a poor plate but also to see that a good plate is properly taken care of and able to print sufficient impressions.

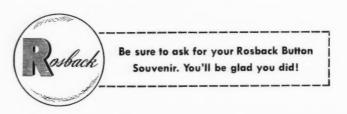
In pressmanship as in platemaking there is very little factual knowledge to guide the operator and there are many many ideas which they have which are, to say the least, questionable if not completely erroneous. Most of these ideas have some basis in fact, formed from experience and interpreted on the basis of previous experiences. If the analysis of previous troubles has been correct, or approximately so, a pressman is considered to be good, and the more experiences he has had and correctly analyzed the better pressman he is.

This should rate the expert pressman as the artist supreme, but this is not as it should be. Any letterpress pressman knows that there is enough artistic ability required in producing a good job without having to fool with plates of doubtful quality, ink whose function in keeping the plate clean is little understood, and fountain water and dampening system whose function has never been thoroughly studied. Again, as in the case of platemaking, to merely attempt to duplicate shop performance on a laboratory scale is not enough and cannot be expected to give results which have universal application. Here again there are some encouraging signs. The work being done at the laboratories of the National Printing Ink Research Institute is an attempt to discover the nature of the reactions which take place when fountain water, metal plates, paper, and ink work together to make offset lithographic print. If this work is of a fundamental nature, as it appears to be intended, it should result in the discovery of facts which will be true under all conditions and the old excuse that "things are different in our shop" will not hold water. What causes that difference? Why permit it to exist?

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Much of the interest which is at present centering around the fourth class of plates, the multi-metal type, is due primarily to the uncertainty surrounding the production and use of the more conventional types of plates. Although the original purpose behind the introduction of these plates into this country was to attempt to use the offset lithographic process in long-run publication work with editions well over the million impression mark, their use has been found to be economical even on shortrun commercial work on small presses. Such economy could only be justified on the basis of troubles which arise from the use of aluminum and zinc plates.

Questions About Offset Answered by Charles F. King

POSITIVE ON GLASS

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The other day a customer of ours supplied us with a positive on glass to be used for part of a job. It was a halftone of his plant which he wanted us to use for the front and back cover of the piece he wanted us to do for him. He was under the impression that we could use this directly in making the one-up plate for the cover. We told him that we would rather have the glossy print from which the glass was made, since we were not in the habit of handling glass but did all of our work on film. He supplied us with the print and we made the job but he felt that our charge should have been less if we had used the glass. Should we have been able to make the job cheaper by using his glass

If the positive was the same size as the print for the cover was to be, you could have used the positive to make your press plate. Of course a positive can only be used directly for making a deep-etch plate, and the care required in the vacuum frame is enough to scare any platemaker not in the habit of using glass. In the first place, the glass plate and the inside of the glass on the frame must be free from any hard specks of any kind. The edges of the plate must be built up with cardboard and paper of exactly the same thickness as the plate when under the vacuum. This means that several trials are usually necessary to get this cardboard paper frame around the plate to just the right thickness to make good contact and still not put a strain on the positive. At each trial and when the shot is finally made the vacuum must be applied slowly. Usually not as much vacuum is used. All of these precautions are necessary to prevent cracking or smashing the positive.

If the size of the print was to be different from that of the positive it could have been used but as far as your expense was concerned it would have made no difference. In fact it undoubtedly would have caused you more trouble than working in the manner in which you were accustomed.

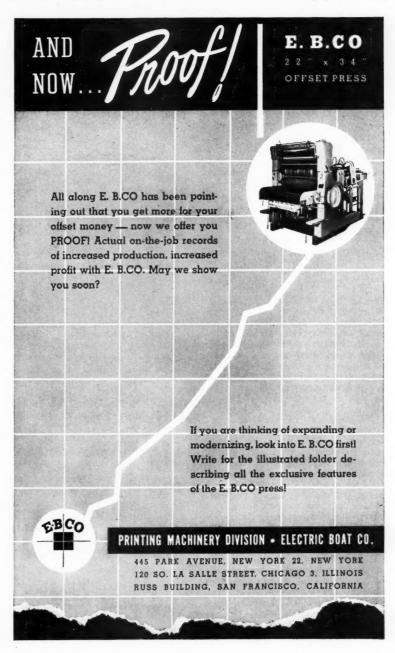
PAPER AND WEATHER

We purchase so-called "preconditioned" paper exclusively and generally have very good luck with it even though our pressroom is not air-conditioned. Recently we received an order of paper which gave us trouble from curling. We first noticed it on the load which had been brought into the pressroom and unwrapped just before finishing the previous job. The load was absolutely flat at the time the wrappings

were taken off but by the time we were ready to put it into the feeder the front and back edges were very badly curled up, and by the time the makeready was finished and we were ready to run the job it was almost impossible to feed the stock through the press. The stock was C1S label paper.

It was our understanding that preconditioned paper should not act like this but when we called our paper supplier he blamed it on the exceptionally damp weather we had been having. We have had weather just as bad before but we have never run into a condition like this since we have been buying this grade of paper. Have we just been lucky before or should this not occur with preconditioned paper?

Undoubtedly, if you had had a sword hydrometer which you could have inserted into the load, you would have found it to be considerably drier than the atmosphere in your pressroom. Preconditioning does help take the tendency to stretch and shrink out of the paper but when



extreme differences exist between the paper and the room, curling is likely to occur.

There is still much to be learned about the behavior of paper, but there is one thing which must be remembered. Paper is made on highspeed equipment, just as a modern lithographic press operates at a high rate of speed. The pressman on an old flat-bed letterpress can pull a sheet every ten minutes and check it over. Before he shuts off the press or makes any correction, at the most only 150 sheets would have been spoiled, but on a postwar offset press 500 sheets or more would be spoiled. Papermaking is a much higher speed operation and some preconditioning is done in roll form at relatively high speeds. Slight differences in the original composition or moisture content of the stock will make for differences in the finished

Also calendering plays an important part in the tendency of paper to curl. From the description of the trouble which you gave, that the front and back edges curled up, I would tend to believe that the sheet had been slightly overcalendered. In making that statement I am presuming that the stock was purchased to run the press with the grain of the paper following the axis of the press cylinders.

RIGHT AMOUNT OF INK

Recently we re-ran a job which we had run just a few months before. Since we had been expecting a re-run on that order, we had saved the plates. When we put them on the press they rolled up clean and perfect in every detail. Once we started running on the job, the plate for the background color began to go blind in the solid areas at the corners and at the edges. We made a new plate and after a few hundred impressions it too began to go blind in the same places. The ink used on this plate had been a special shade which had been matched by our ink company and ordered separately for each job. Since we had started out with the remains from our previous ink order we thought that perhaps something had happened to it, so we tried the new lot. The same thing happened. We rubbed-up the new plate and it took the new ink right away, but when we started to print the plate again went blind.

The only difference between this job and the other run was the paper. We had used paper from another supplier on the other order. Since we had some of the paper from the other supplier on hand we put it on the press and immediately we had to put on more notches of ink to make it print. We had no trouble with the plate. Both papers were supposed to be exactly the same

grade and we have since run off the paper that gave us trouble on other jobs without the plates going blind. Could it be that there could have been some alkali or something in the paper which would make it not work with the ink? Or could it have been something in the ink that worked on the paper surface and made the plate go blind?

This is only a guess but to me the giveaway in your story is the fact that you had to put on more notches of ink. You mention that this was a background color and most likely a rather solid form. Also that it was a special match-up for color. Undoubtedly the fountain setting was rather critical and it was necessary to feed just the right amount of ink to the form to get the correct shade. If the surface of the two stocks differed in their ability to remove ink from the blanket (and this is quite

possible even though both papers were apparently of the same grade) a pressman would attempt to reduce the strength of the print on the sheet which accepted the most ink. By so doing he could be starving the plate. That is, the image areas would not receive enough ink to maintain their grease-receptivity and would have practically no ink on the image areas when the dampers passed over them.

The one thing you apparently did not do was to send for the inkmaker and have the strength of the color reduced. This would have permitted carrying a larger volume of ink and still keeping the same print tone. This is one of the reasons why it is so important to supply the inkmaker with the exact stock on which the job is to be run when a match-up is to be made.



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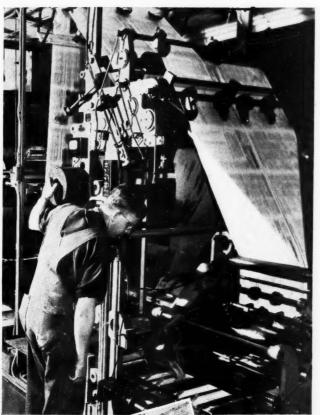
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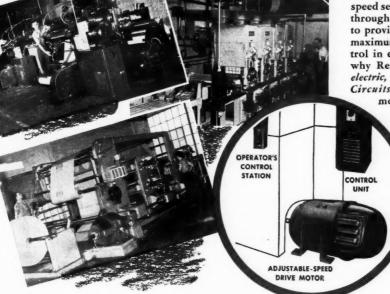
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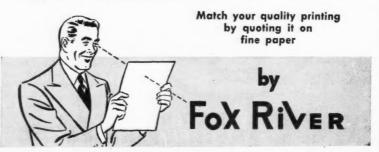
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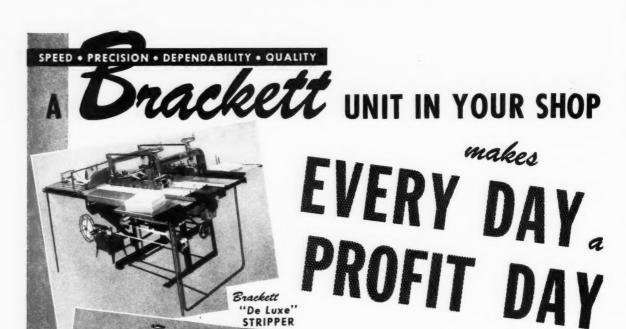
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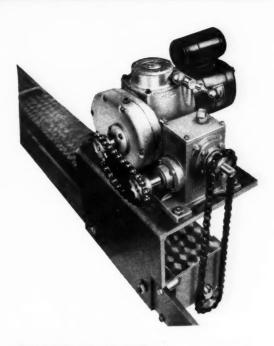
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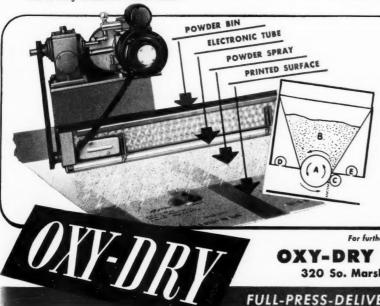
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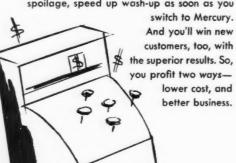
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These groups and individuals watch constantly for new ideas, search for improvements in present methods, materials and machinery. They are in close touch with the hundreds of research projects and experiments going on today all over the country. As these are brought to successful conclusion, members of the Council who are specialists in the given field, report and describe the results in the monographs that comprise the Research and Operations Manual. Printing Industry of America, Inc., publishes and distributes the Manual.

You can take advantage of this work, provide yourself and your associates, at your fingertips, quick access to practical, down-to-earth information that may, on just one job, save you many times the cost of the entire Manual.

Order these reports now, today...for your personal gain...for your associates' advantage... and to help support the continuation of this progressive program for the growth and betterment of the graphic arts industry. Here's what you get... (over)

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RESEARCH and OPERATIONS MANUAL

The RESEARCH and ENGINEERING COUNCIL of the Graphic Arts Industry, Inc. encourages, coordinates and, through PIA, disseminates information about successful experiments in such fields as . . .

Paper Bindery Materials Handling
Ink Offset Lithography Standards
Composition Gravure Engineering
Presswork Plates, all kinds Painting and
Printers Rollers Engraving standards Lighting

(For list of reports for year ending May 31, 1950, comprising Vol. I of the Manual, see page 4.)

A score of important research and engineering projects on a wide variety of production problems, new methods and materials, new practices and procedures, are nearing completion. Some will be finished in the year beginning June 1, 1950. A full report on each of these will comprise Vol. II of the Research and Operations Manual. Here's a brief outline of the reports now under way:

Static Electricity

This report presents in clear, understandable, non-technical terms, authoritative facts about static electricity, and what you can do to reduce production delays and other unsatisfactory conditions resulting from it.

New Composing Methods

A factual analysis of various new machines, some already on the market, others still in the development stage. An authoritative statement of their purposes and advantages, for your guidance in selecting the one you need.

Current Research Projects This report, RS-2, lists some 260 Research and Engineering projects under way on May 31, 1950, in the graphic arts field. (The first report, RS-1, was a similar listing as of June, 1949.) These are programs, not confidential, now being carried on by individual companies and organizations, and technical associations in the graphic arts.

Materials Handling Each year well over a million dollars in damage to paper stock occurs, due to improper packing, shipping and handling. Leaders in the materials handling and traffic fields spent two years checking the causes and cures. This report offers recommended methods to avoid this loss.

Preventive Maintenance A workable system for preventive maintenance in printing plants is presented in this report, based on practices in highly efficient plants and extensive experience in the U. S. Government Printing Office, in maintaining equipment.

Equipment Manuals, Parts Catalogs, and Lubrication Charts

plied with proper and adequate information. This report, by a large group of technical experts of the equipment manufacturers, should result in: (1) Adequate instruction manuals for personnel on operating and maintaining printing equipment; (2) catalogs with parts listed uniformly, easily identifiable; and (3) standard lubrication charts with data shown uniformly for all equipment.

OTHER REPORTS . . . dealing with current research and engineering projects are in work on such subjects as Rubber and Plastic Plates, Photoengraving Specifications, Painting and Lighting, Magnesium Plates (supplement), Acetate Proofs, Paper Boards for Bookbinding, Soundproofing, etc.

These reports are a veritable treasure house for the alert manager willing to explore them.

Publications of the Research and Engineering Council

What They Are...

A series of reports, each devoted to a single problem, operation or new idea in the broad field of printing production. These monographs offer you up-to-date, authoritative, dependable information and suggestions for practical use in your own plant — designed to help you produce a better product at a lower cost.

How They Are Used ...

The reports in the Manual give you quick and easy

- 1. Practical answers to immediate problems
- 2. Dependable facts on selected new developments
- Information for future planning
 Basic material for group conferences.

Who Uses Them ...

Every key man in your plant will benefit by having these reports at hand for quick reference.

- GENERAL MANAGERS To increase all-round efficiency of plant operations by keeping posted on new ideas and improved methods;
- b DEPARTMENT MANAGERS To keep informed in their specialty . . . and to avoid over-specializing by being aware of problems and progress of other departments;
- c SALES MANAGERS To gain prestige for the company with "wise" buyers by having all the answers on tap when new methods are mentioned.
- d— THE HEAD MAN To save time in learning what his smart competitors may be thinking about, and what his own men should be thinking about.

What is the RESEARCH and ENGINEERING COUNCIL

of the Graphic Arts Industry, Inc.?

The Reports comprising the PIA RESEARCH and OPERATIONS MANUAL are the cooperative effort of the Research and Engineering Council. This independent organization is made up of 364 printing establishments, research organizations, institutions and laboratories, universities, graphic arts suppliers and equipment manufacturers, trade associations, the U. S. Government Printing Office, and interested individuals.

The fundamental job of the Council is to aid the graphic arts industry to produce a better product at a lower cost. To this end it identifies and defines problems in the industry; encourages research and engineering studies to find their solution; correlates and coordinates the abilities, efforts and resources of those working on the problems; and reports the results of these research and engineering projects, plus developments in new and

improved materials, methods and operations, in the graphic arts industry. Printing Industry of America, Inc., publishes and distributes these reports, now beginning their second volume.

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- By using these reports as a springboard for working out even better ideas of your own.

Fortunately, in our country and our industry there is no corner on brains. In your own plant today you probably are using original or adapted methods, procedures, or devices that are unusual and efficient. By combining the ideas of others with your own, you increase your possibilities tremendously.

You can get these ideas of others during the coming year by subscribing NOW to Vol. II of the PIA RESEARCH and OPERATIONS MANUAL. (And you would be wise to subscribe at the same time to Vol. I, the 17 reports for the year ending May 31, 1950, available immediately.)

Remember, the cost of these reports for one full year is only \$20 - less than the weekly wage of any employee in your plant. Yet they bring you the results of hours of work of highly trained technicians, specialists and experts in their field, costing many thousands of dollars.

Do you realize that JUST ONE IDEA in just one of these reports may be worth to you many times their cost? Just one idea in one report might prove to be the spark that would light the fire of your own imagination and ingenuity in developing a new or improved method, device or procedure that would give you a decided production advantage!

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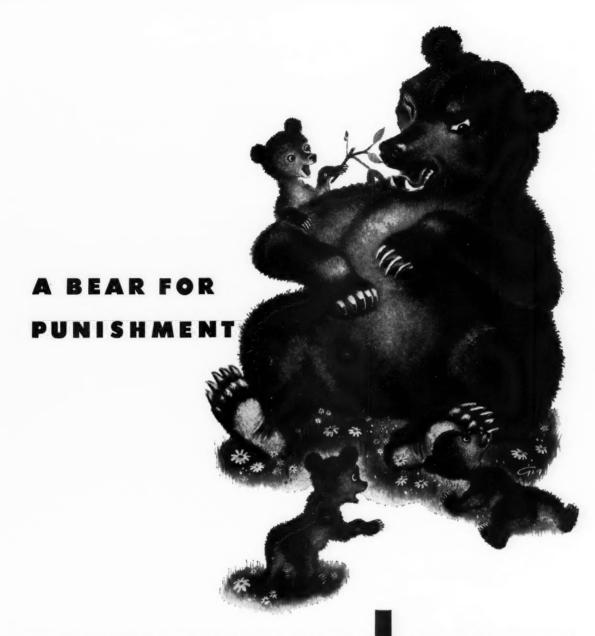
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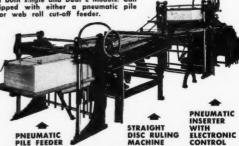
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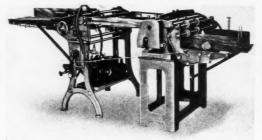
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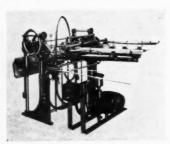
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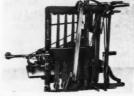


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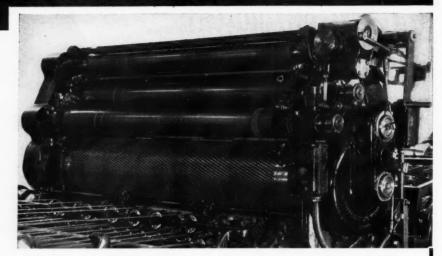
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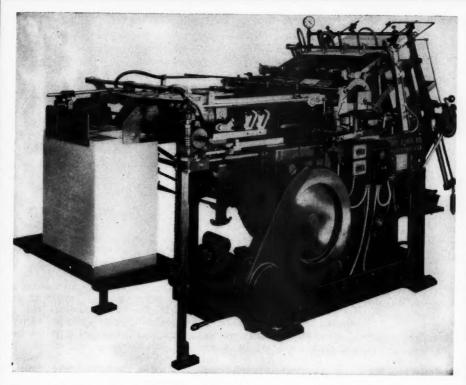
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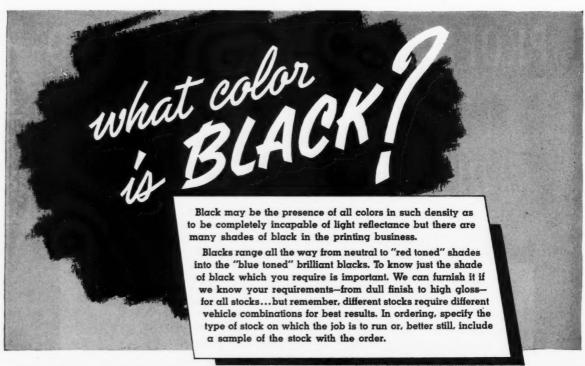
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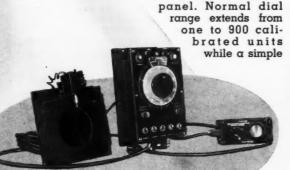
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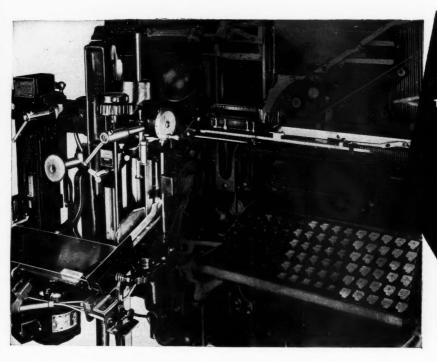
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A brand new feature of the STAR Automatic Quadder, permitting complete synchronization with the Mohr Saw . . . a flick of the dial simultaneously sets Assembler Slide, Vise Jaw and Quadder.

Here are two new features which the newspapers and many printing plants have been awaiting ever since the STAR Quadder was first presented to the trade.

See the STAR Quadder with these features in actual demonstration at Booth No. 425 at the Graphic Arts Exposition, Chicago.

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Read what some of our satisfied users say;

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We have just recently installed
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on our 2-2/color and two on
our two single color and we
went to tell you that we are
well pleased with the installation. Our colors are running
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saving anywhere from 5% to
8% on our ink consumption. We
find on our long runs we save
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smoother lay.
Yery truly yours,
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ALL MAKES OF PRESSES

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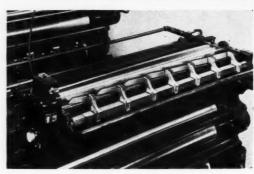
Dear Sir:

We are pleased to answer your inquiry as to the performance of our Ortleb Agitators.
These agitators were installed on our Harris Offset Press and have been operating on our regular two-shift schedule for more than two years without a breakdown.

Do we need to state more?

Very truly yours, The Tudor Press, Inc. G. E. Gustafson, Plant Manager

GEG/ ble



- * Saves 10% Ink Bill
- **★** Maintains uniformity of color
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The versatility of this machine in the manufacture of all types of business forms which require collation and tipping operation is literally without limitation. With a basic maximum sheet size on the form table of 17" x 251/2" larger fold-over forms can be prepared with ease when required.

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You will find an interesting and educational display of what's new in printing roller equipment as well as a full representation of the products we manufacture. You will most likely meet fellow members of the craft with plant and production problems comparable to your own. An exchange of ideas and an opportunity to gather first hand information on the latest Ideal developments will make your visit to the exposition a profitable and relaxing

ROGKET ROLLE

are the latest achievement of Ideal research engineers and represent the first advance in rollers for job and small high-speed presses in 40 or 50 years.

Once again Ideal has set the pace in the roller industry.

Ideal Rockets produce clean, sharp, clear impressions faster than ever before imagined, are impervious to temperature changes and will retain their stable size without swelling or shrinkage.

Contact your nearest Ideal representative and he will be pleased to supply your plant requirements from this varied assortment of styles and sizes.

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12 x 18 Kluge ROCKETS @ \$4.50 each * Grooved for Oilite Boxes.

10 x 15 Craftsman ROCKETS @ \$3.75 each

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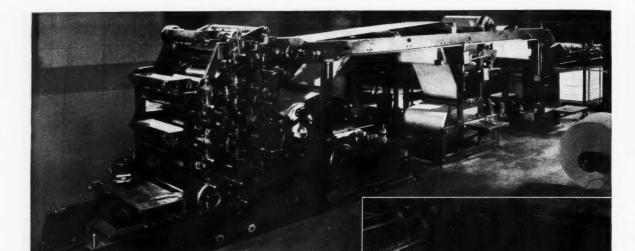
8 x 12 C & P - ROCKETS @ \$2.90 each

Prices include cores, boxing and transportation.

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Standard sizes: 61/4"-81/2"-83/4"-10"-101/2"-123/4"-15"

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Has proven itself in letterpress plants all over the U. S. and CANADA

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See Display with Western Newspaper Union at Graphic Arts Exposition, Chicago, September 11 - 23, 1950

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CHEMCO CONTROLLED TEMPERATURE DARKROOM SINK

It makes no difference whether it's summer or winter! It makes no difference whether it's hot or cold outside or in the darkroom. It makes no difference whether your incoming water supply is warm or cold.

A flick of a switch and this Chemco unit is in operation. Set the dial to the temperature desired . . . and that's exactly the water temperature (plus or minus ½° F) you'll get, fast!

The Chemco Controlled Temperature Darkroom Sink (Model 910) offers much more than unequalled control:

ECONOMY Counterflow Heat Exchanger, using drain water, reduces cooling and heating loads to half!

EFFICIENCY Cools 40 gallons per hour from 85°F to 60°F and heats 40 gallons per hour from 40°F

CONVENIENCE Swirl jets keep sink water in constant motion to prevent stratification . . . single dial control of heater-cooler unit prevents simultaneous operation . . . ample storage space . . . removable center wash tray has separate

LONG LIFE Entirely corrosion-proof with Stainless Steel working surfaces, splashboard and trays. (Stainless steel processing trays are extra.) Cabinet is aluminum and aluminum covered construction finished with Chemco Green Lacquer.



Chemco Controlled Temperature Darkroom Sink Model 910

Chemco Controlled Temperature Darkroom Sink Model 911 is identical to Model 910, but without the heater-cooler unit. Instead, it is equipped with pressure equalized thermostatic mixing valve, and is for use where cool (65°F or less) water is available the year round.



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Sufficient power to drive the drill through a 2" lift of any kind of stock

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The smart business executive pays attention to the basic factors that make his printed messages "click" in trade and consumer channels. One of these factors is the persuasive influence of fine papers. In the production of papers for every printing purpose, West Virginia recognizes that eye-appeal plays an essential role in advertising and sales promotion results. The printer and advertiser, therefore, may confidently select West Virginia papers with the knowledge that they add visual power as well as graphic effectiveness to printed salesmanship.

As refreshing as a breeze in warm weather, West Virginia Inspirations for Printers presents many original and timely uses of fine printing papers. Issue No. 181 supplies you with a grandstand seat for a top-notch performance by many notable illustrators and designers in American advertising. Your copy of this issue may be obtained by writing or phoning to your nearest West Virginia Distributor or to any of the Company addresses listed on this page.

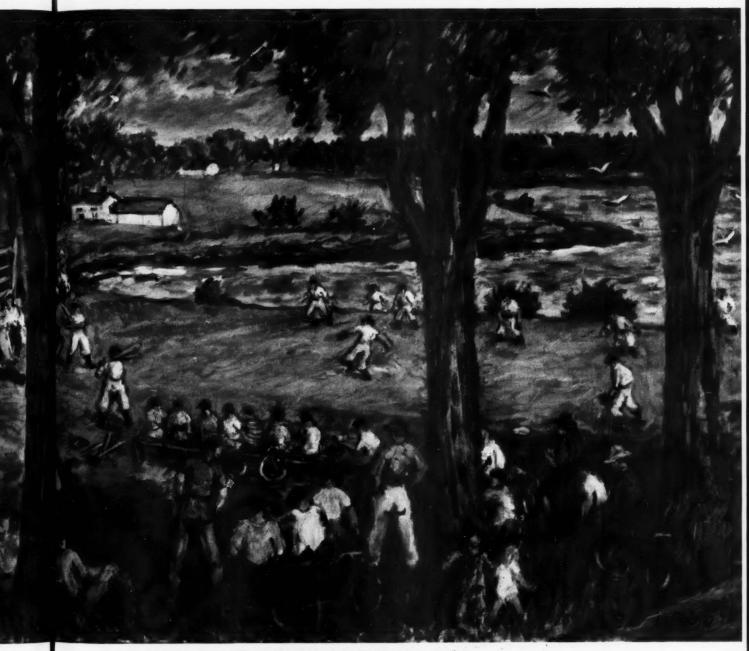
Cover Artist

Recent exhibits demonstrate Waldo Peirce's achievement of that vital and personal style which has made him one of the foremost contemporary American painters. One critic has said that Peirce combines the emotional gusto of a Van Gogh and the sensuous realism of a Renoir. His work is represented in the Metropolitan Museum of Art, the Whitney Museum of American Art, the Carnegie Institute, the Pennsylvania Academy of Fine Arts, and many other art centres.



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CHICAGO

September 11th-23rd



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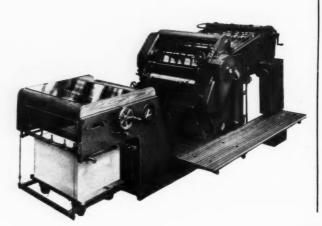
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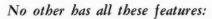
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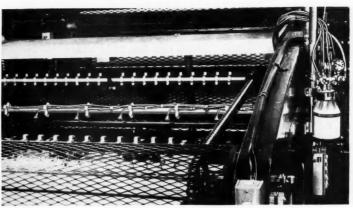
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IT STOPS OFFSETTING AND WITH NO FOGGING



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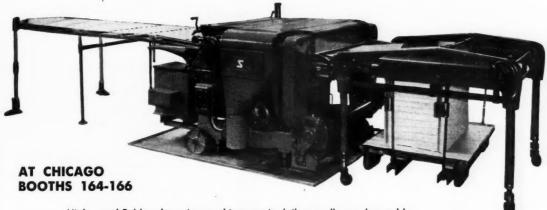
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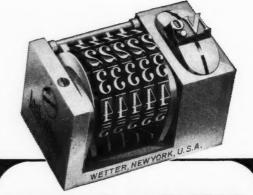


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The Junior model, recently added to the Registerscope line, was developed for registering forms for smaller presses. It has its own imposing surface. Be sure to see the Junior model on display at Booth 380.

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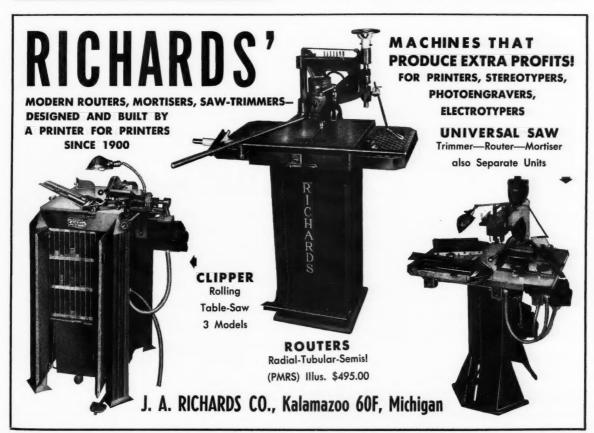
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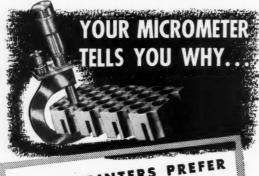
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CLASSIFIED

Buyers' Guide

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Classified Buyers' Guide (continued)
FOR SALE (continued)



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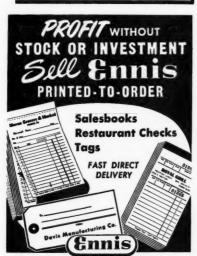
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TELETYPESETTER

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(Continued on next page)





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FOR SALE (continued)

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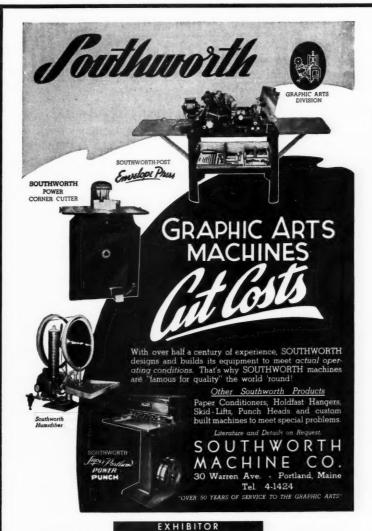
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(Continued on next page)



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INDEX TO DISPLAY

ADVERTISERS

IN THIS ISSUE

Ace Carb Acme Ty American American	on Pape	r C	0.				٠			142
Acme Ty	pe Found	iry			٠		٠			149
American	Evatype	Co	rp.						1	7, 18
American	Number	ing	M	ach	ine	C	0.			142
American	Roller C	o.								44
American	Steel Ch	ase	Co		٠			•		148
American American American Amsterda	Type Fo	oun	ders					6,	7, 2	8, 29
Amsterda	m Conti	nen	tal	Ту	pes	G		_		
Graphic	Eqpt.,	Inc	•				13	3,	138,	, 150
Ansco, di	vision of	G	ene	ral	An	ilin	e			
and Fil	m Corp.	٠							٠	22
Arbogust,										
Baltotype Banthin E Baum, Ru Beal, Jack Benson, N Bingham's			٠							142
Banthin E	ngineeri	ng	Co.							125
Baum, Ru	ssell Ern	est,	In	c.						3
Beal, Jack	, Vertica	I Se	rvio	:e						144
Benson, N	1. C., Co									136
Bingham's	, Sam'l.,	So	n N	lfg.	. Co	٥.				27
Dialentore	, E. W.,	-	.,							
div. of Brackett	National	Le	ad	Co			٠			114
Brackett :	Stripping	Ma	chi	ne	Co.					112
Brock and Brown-Bri	d Rankir	1								136
Brown-Bri	dge Mill	s, I	nc.							144
Cantine, I Central Co Challenge Champion Chandler	dartin C									10
Control Co	omnound	ina	Ċ	•		۰	٠	•	•	151
Challenge	Machine	my	Co	•	۰		•	٠	۰	127
Champion	Dance a	-4	EIL.		· ·		۰	۰	•	137
Chandler	nd Price	Co	FID	re	CU.		٠	٠	•	31
Chandler a Chapman Chemco P Cheshire A Cline Elec Consolidat	Floctric	No	utra	liv.	or 1	co.	۰	۰	•	148
Chames P	hotoprod	146		-	Inc			۰	•	131
Cheshire A	Anilina A	inci	ine	.,	Inc	**	٠	٠	٠	138
Clina Flor	tric Mfa	Co			1116.		٠	٠	•	104
Consolidat	ad Wate	. D		. 5.	D.		·		•	53
Consolidat Cottrell, C	R &	one	C			per	-	0.	•	23
Craftsman	Line-Ur	T	hle	C	orn.	•	۰		۰	43
Craftsman Cromwell	Paner C	0.			li	nsid	ie.	Rad	k C	OVER
Dexter Fo	lder Co.						٠		25,	114
Douthitt (Corp			٠		٠				38
Dexter Fo Douthitt (Dutro, Or	ville, & S	on,	In	c.		•	٠			8
Eastern Co Eastman II Elco Typo Electric Bo Electrogra Engdahl B Ennis Tag	are.									117
Eastern C	orp		•	•	•	•	•			111
Eleo Typo	esanhie	Ear	·iee	•	•		•	٠	•	150
Floctric Bo	graphic .	3011	ice		•	•	•	۰	٠	107
Flectrogra	nhic Cor	n .		•	•	•	•	•	32	33
Engdahl B	inderv	р.								144
Ennis Tag	and Sale	sho	nk	Co				Ť		145
Liniis 109	and soic	350	· ·		•	•	•	٠	•	
Force Wm	. A., & C	o.								37
Fox River	Paper C	orp								110
Fox River Fraser Pap	er, Ltd.									10
Gaetjens E	Berger &	Wil	rth,	In	c.		٠		٠	126
General A	niline ar	nd	Filn	9 (Corp		٠			22
General B	inding C	orp.		•					۰	108
Globe Prii	iters' Su	pply	1, 1	nc.		•		•	٠	146
Graphic A	rts Corp.	of	Ohi	0	*	•	۰			15
General A General B Globe Prin Graphic A Haberule										150
Hamilton	Publishir	19	Co.							
	Publishir Mfg. Co	ig	Co.		:				:	34
namilton	Publishir Mfg. Co Tool Co.	ig	Co.		:			:	:	34 42
Hammerm	Mfg. Co Tool Co ill Paper	Co		:	:			:	21,	123
Hammerm	Mfg. Co Tool Co ill Paper Machine	Co	Buil	de	rs, I	nc.		:	21,	123
Hammerm Hammond Hano, Phi	Mfg. Co Tool Co ill Paper Machine	Co	Buil	de	rs, I	nc.			21,	123
Hammerm Hammond Hano, Phi	Mfg. Co Tool Co ill Paper Machine	Co	Buil	de	: rs, I	nc.			: 21,	105
Hammerm Hammond Hano, Phi Harris-Sey Heidelbers	Mfg. Co Tool Co ill Paper Machine lip, Co., bold	Co ry In	Buil	de	rs, I	nc.			21,	123 105 143 52 51
Hammerm Hammond Hano, Phi Harris-Sey Heidelberg Henschel,	Mfg. Co Tool Co. ill Paper Machine lip, Co., bold . J C B., Mi	Co ry In	Buil	de	rs, I	nc.			21,	105 143 52
Hammerm Hammond Hano, Phi Harris-Sey	Mfg. Co Tool Co. ill Paper Machine lip, Co., bold . J C B., Mi	Co ry In	Buil	de	rs, I	nc.			21,	123 105 143 52 51
Hammerm Hammond Hano, Phi Harris-Sey Heidelberg Henschel, Herbert P	Mfg. Co Tool Co. ill Paper Machine lip, Co., bold . I C B., Mi	Co ry In	Buil c. Co.	de	rs, I	nc.			21,	105 143 52 51 140
Hammerm Hammond Hano, Phi Harris-Sey Heidelberg Henschel, Herbert P	Mfg. Co Tool Co. ill Paper Machine lip, Co., bold . I C B., Mi	Co ry In	Buil c.	de	rs, I	nc.			21,	123 105 143 52 51 140 148
Hammerm Hammond Hano, Phi Harris-Sey Heidelbers Henschel, Herbert P Hess and H & H Pr	Mfg. Co Tool Co. ill Paper Machine ilip, Co., bold . C B., Mi roducts, Barker oducts	Co ry In	Buil c.	de	rs, I	nc.			21,	123 105 143 52 51 140 148 130
Hammerm Hammond Hano, Phi Harris-Sey Heidelbers Henschel, Herbert Ph Hess and H & H Pr Hoe, R., & Hollingswe	Mfg. Co Tool Co. ill Paper Machine lip, Co., bold . ; C B., Mi roducts, Barker oducts r Co., In	Co ry In Inc.	Build c.	de	rs, I	nc.			21,	123 105 143 52 51 140 148 130 139
Hammerm Hammond Hano, Phi Harris-Sey Heidelbers Henschel, Herbert Ph Hess and H & H Pr Hoe, R., & Hollingswe	Mfg. Co Tool Co. ill Paper Machine lip, Co., bold . ; C B., Mi roducts, Barker oducts r Co., In	Co ry In Inc.	Build c.	de	rs, I	nc.			21,	123 105 143 52 51 140 148 130 139
Hammerm Hammond Hano, Phi Harris-Sey Heidelbers Henschel, Herbert Pi Hess and H & H Pr Hoe, R., &	Mfg. Co Tool Co ill Paper Machine lip, Co., bold . ; C B., Mi roducts, Barker oducts r Co., In orth & W louse Pu	Co ry In g., Inc.	Buil c. Co.	Coons	rs, I	nc.			21,	123 105 143 52 51 140 148 130 139 12

INDEX TO DISPLAY

ADVERTISERS

IN THIS ISSUE

Ideal Roller and Mfg. International Paper C	_		•			•		145
International Paper C Intertype Corp.	0.				do	B		22
Kimberly-Clark Corp.	•	•	۰		0	1	118,	119
Kimberly-Clark Corp. Lake Erie Engineering Lake Shore Electrotypi Lanston Monotype Ma Lassco Products, Inc. L. A. Type Founders, Lawson, E. P., Co. Linotype Parts Co, Int Ludlow Typograph Co Macbeth Arc Lamp C Mayville Metal Produc McAdams, John, & So McLaurin-Jones Co. Mead Corporation Megill, Edw. L., Co. Mendes, J. Curry, Cor Mergenthaler Linotypy Michle Printing Press	C	orp.		٠		9		54
Lake Shore Electrorypi	ing	ne.	Co			۰	34	26
Lassen Products, Inc.		ine						118
L. A. Type Founders,	Inc							143
Lawson, E. P., Co.	٠			۰				47
Linotype Parts Co, Inc	C							127
Ludlow Typograph Co.	•	۰	•	•				1
Macbeth Arc Lamp C	0.	•	0		٠			146
Mayville Metal Produc	cts	Co.		٠				149
McAdams, John, & So	ns,	In	c.	0			•	120
Mead Corporation	•		•					9
Megill, Edw. L., Co.								110
Mendes, J. Curry, Cor	p.							128
Mergenthaler Linotype	e C	0.	. It	nsic	ie i	ro	nt C	ovei
Miehle Printing Press	an	d M	fg.	C	0.			4, 5
Miller Printing Machin Minnesota Mining and	ery	Ce	٠.			•	•	150
National Graphic Arts	E	Co.	iitic	on,	In	C.		121
New Fra Mfg. Co.	er	CO.		•	•		•	41
New Era Mfg. Co. Northern Machine Wo	orks					1	145,	147
Nygren-Dahly Compan	ıy							46
Ortleb Machinery Co.								128
Ortleb Machinery Co. Oxford Paper Co. Oxy-Dry Sprayer Corp.								14
Oxy-Dry Sprayer Corp.								113
Paasche Airbrush Co.								143
Pacific Gear & Tool W	orl	KS	٠					152
Paper Mfgrs. Co								150
Payne and Craig Corp.	•		•		•	•	•	144
Potdevin Machine Co.	•	*	•	•	•	•		114
Printing Machinery D	ivis	ion	•					107
Oxy-Dry Sprayer Corp. Paasche Airbrush Co. Pacific Gear & Tool W Paper Mfgrs. Co. Payne and Craig Corp. Perfection Type, Inc. Potdevin Machine Co. Printing Machinery D Printrade Machinery C Process Color Plate Co Rapid Roller Co. Rathbun and Bird Co. Reliance Electric and	orp	6						139
Process Color Plate Co	0.						35	, 36
Rapid Roller Co			٠					116
Rathbun and Bird Co. Reliance Electric and	., 1	nc.				4		149
Reliance Electric and	En	gine	eeri	ng	C	٥.		109
Richards, J. A., Co. Roberts Numbering M						. '	71,	50
Robertson, R. R., Co.	aci	ine			•			126
Robertson, R. R., Co. Rosback, F. P., Co.		-						
						٠	٠	106
St. Regis Sales Corp.	•					٠	٠	106
St. Regis Sales Corp. Scott, Walter, & Co., I	Inc.					٠	٠	106
St. Regis Sales Corp. Scott, Walter, & Co., I	inc.	es'n						106 115 150 140
St. Regis Sales Corp. Scott, Walter, & Co., I Screen Process Printing Seal-O-Matic Machine	nc.	ss'n		·				106 115 150 140 40
St. Regis Sales Corp. Scott, Walter, & Co., I Screen Process Printing Seal-O-Matic Machine Seneca Wire and Mfg.	inc.	ss'n		Ir				106 115 150 140 40 149
St. Regis Sales Corp. Scott, Walter, & Co., I Screen Process Printing Seal-O-Matic Machine Seal-O-Matic Machine Seal-O-Matic Machine Seal-O-Matic Machine Seal-O-Matic Machine	MI Co.	ss'n		Ir	nc.			106 115 150 140 40 149
St. Regis Sales Corp. Scott, Walter, & Co., I Screen Process Printing Seal-O-Matic Machine Seal-O-Matic Machine Seal-O-Matic Machine Seal-O-Matic Machine Seal-O-Matic Machine	MI Co.	ss'n		Ir	nc.			106 115 150 140 40 149
St. Regis Sales Corp. Scott, Walter, & Co., I Screen Process Printing Seal-O-Matic Machine Seneca Wire and Mfg. Shinn, Cobb Siebold, J. H. & G. B. Simonds Saw and Steel	MI Co.	ss'n	Co.,	lr				106 115 150 140 40 149
St. Regis Sales Corp. Scott, Walter, & Co., I Screen Process Printing Seal-O-Matic Machine Seneca Wire and Mfg. Shinn, Cobb Siebold, J. H. & G. B. Simonds Saw and Steel	MI Co.	ss'n	Co.,	lr				106 115 150 140 40 149 149 30 39 49
St. Regis Sales Corp. Scott, Walter, & Co., I Screen Process Printing Seal-O-Matic Machine Seneca Wire and Mfg. Shinn, Cobb Siebold, J. H. & G. B. Simonds Saw and Steel	MI Co.	ss'n	Co.,	lr				106 115 150 140 40 149 30 39 49 147 146
St. Regis Sales Corp. Scott, Walter, & Co., I Screen Process Printing Seal-O-Matic Machine Seneca Wire and Mfg. Shinn, Cobb Siebold, J. H. & G. B. Simonds Saw and Steel	MI Co.	ss'n	Co.,	lr				106 115 150 140 40 149 30 39 49 147 146
St. Regis Sales Corp. Scott, Walter, & Co., I Screen Process Printing Seal-O-Matic Machine Seneca Wire and Mfg. Shinn, Cobb Siebold, J. H. & G. B. Simonds Saw and Steel	MI Co.	ss'n	Co.,	lr				106 115 150 140 40 149 30 39 49 147 146 130
St. Regis Sales Corp. Scott, Walter, & Co., I Screen Process Printing Seal-O-Matic Machine Seneca Wire and Mfg. Shinn, Cobb . Siebold, J. H. & G. B. Simonds Saw and Steel Sleight Metallic Ink C Southworth Machine Spero, J., & Co. Standard Tag Co. Stanley, Walter Y. Stout, Samuel C., Co.	Minc.	ss'n fg. (inc. o. pani	Co.	in				106 115 150 140 40 149 30 39 49 147 146
St. Regis Sales Corp. Scott, Walter, & Co., I Screen Process Printing Seal-O-Matic Machine Seneca Wire and Mfg. Shinn, Cobb . Siebold, J. H. & G. B. Simonds Saw and Steel Sleight Metallic Ink C Southworth Machine Spero, J., & Co. Standard Tag Co. Stanley, Walter Y. Stout, Samuel C., Co. Strathmore Paper Co.	Minc.	ss'n fg. (nc. o. pani	Co.,	in in				106 115 150 140 40 149 30 39 49 147 146 146 130
St. Regis Sales Corp. Scott, Walter, & Co., I Screen Process Printing Seal-O-Matic Machine Seneca Wire and Mfg. Shinn, Cobb . Siebold, J. H. & G. B. Simonds Saw and Steel Sleight Metallic Ink C Southworth Machine Spero, J., & Co. Standard Tag Co. Stanley, Walter Y. Stanley, Walter Y. Stanley, Walter Y. Co. Strathmore Paper Co. Syntron Co	MI Co., I Coomp	ss'n fg. (inc. o. opani	Co.,	In				106 115 150 140 40 149 30 39 49 147 146 130 145 124
St. Regis Sales Corp. Scott, Walter, & Co., I Screen Process Printing Seal-O-Matic Machine Seneca Wire and Mfg. Shinn, Cobb . Slebold, J. H. & G. B. Simonds Saw and Steel Sleight Metallic Ink Ct Southworth Machine (Southworth	Minc.	ss'n fg. (nc. o. pani	Co.,	In .				106 115 150 140 40 149 30 39 49 147 146 130 145 124
St. Regis Sales Corp. Scott, Walter, & Co., I Screen Process Printing Seal-O-Matic Machine Seneca Wire and Mfg. Shinn, Cobb Siebold, J. H. & G. B. Simonds Saw and Steel Sleight Metallic Ink Cd Southworth Machine Co Standard Tag Co. Stanley, Walter Y. Stout, Samuel C., Co. Strathmore Paper Co. Taylor Machine Co.	Minc.	ss'n fg. (nc. o. pani	Co.,	In .				106 115 150 140 40 149 30 39 49 147 146 130 145 124 110
St. Regis Sales Corp. Scott, Walter, & Co., I Screen Process Printing Seal-O-Matic Machine Seneca Wire and Mfg. Shinn, Cobb Siebold, J. H. & G. B. Simonds Saw and Steel Sleight Metallic Ink Cd Southworth Machine Co Standard Tag Co. Stanley, Walter Y. Stout, Samuel C., Co. Strathmore Paper Co. Taylor Machine Co. Teletypsetter Corp. Thomson-National Pret Ti Pi	MI Co.	nc. o.	Co.,	In				106 115 150 140 40 149 30 39 49 147 146 130 145 1124 1110 141 145 136
St. Regis Sales Corp. Scott, Walter, & Co., I Screen Process Printing Seal-O-Matic Machine Seneca Wire and Mfg. Shinn, Cobb Siebold, J. H. & G. B. Simonds Saw and Steel Sleight Metallic Ink Cd Southworth Machine G Spero, J., & Co. Standard Tag Co. Stanley, Walter Y. Stout, Samuel C., Co. Strathmore Paper Co. Syntron Co. Taylor Machine Co. Teletypsetter Corp. Thomson-National Pret Ti Pi Type and Press of Illin	MI Co.	nc. o.	Co.,	In				106 115 150 140 40 149 30 39 49 147 146 130 145 124 110 141 145 136 144
St. Regis Sales Corp. Scott, Walter, & Co., I Screen Process Printing Seal-O-Matic Machine Seneca Wire and Mfg. Shinn, Cobb Siebold, J. H. & G. B. Simonds Saw and Steel Sleight Metallic Ink Cd Southworth Machine Co Standard Tag Co. Stanley, Walter Y. Stout, Samuel C., Co. Strathmore Paper Co. Taylor Machine Co. Teletypsetter Corp. Thomson-National Pret Ti Pi	MI Co.	nc. o.	es,	In				106 115 150 140 40 149 30 39 49 147 146 130 145 1124 1110 141 145 136
St. Regis Sales Corp. Scott, Walter, & Co., I Screen Process Printing Seal-O-Matic Machine Seneca Wire and Mfg. Shinn, Cobb Siebold, J. H. & G. B. Simonds Saw and Steel Sleight Metallic Ink Cd Southworth Machine G Spero, J., & Co. Standard Tag Co. Stanley, Walter Y. Stout, Samuel C., Co. Strathmore Paper Co. Syntron Co. Taylor Machine Co. Teletypsetter Corp. Thomson-National Pret Ti Pi Type and Press of Illin	inc. All All Co. I Co. Co. I C	nc. o. pani	co., es,	In				106 115 150 140 40 149 30 39 49 147 146 130 145 124 110 141 145 136 144
St. Regis Sales Corp. Scott, Walter, & Co., I Screen Process Printing Seal-O-Matic Machine Seneca Wire and Mfg. Shinn, Cobb Siebold, J. H. & G. B. Simonds Saw and Steel Sleight Metallic Ink Cd Southworth Machine G Spero, J., & Co. Standard Tag Co. Stanley, Walter Y. Stout, Samuel C., Co. Strathmore Paper Co. Syntron Co. Taylor Machine Co. Teletypsetter Corp. Thomson-National Pret Ti Pi Type and Press of Illin U. S. Radium Corp. Vandercook and Sons,	Inc. AMI Co	nc. o. pani	ies,	In				106 115 150 40 149 149 30 39 49 147 146 130 145 1124 110 141 145 136 145
St. Regis Sales Corp. Scott, Walter, & Co., I Screen Process Printing Seal-O-Matic Machine Seneca Wire and Mfg. Shinn, Cobb . Siebold, J. H. & G. B. Simonds Saw and Steel Sleight Metallic Ink Cd. Southworth Machine Spero, J., & Co. Standard Tag Co. Stander, Walter Y. Stout, Samuel C., Co. Strathmore Paper Co. Strathmore Paper Co. Taylor Machine Co. Teletypsetter Corp. Thomson-National Pret Ti Pi . Type and Press of Illin U. S. Radium Corp. Vandercook and Sons, Western Gear Works Western Gear Works	Inc. AMI Co	nc. o. pani	co., es,	In				106 115 150 140 40 149 149 30 39 49 147 146 130 145 1145 136 145 144 48 11 8
St. Regis Sales Corp. Scott, Walter, & Co., I Screen Process Printing Seal-O-Matic Machine Seneca Wire and Mfg. Shinn, Cobb Siebold, J. H. & G. B. Simonds Saw and Steel Sleight Metallic Ink Co. Standard Tag Co. Standard Tag Co. Stanley, Walter Y. Stout, Samuel C., Co. Stanley, Walter Y. Stout, Samuel Co. Taylor Machine Co. Teletypsetter Corp. Thomson-National Pret Ti Pi U. S. Radium Corp. Vandercook and Sons, Western Gear Works Western Gear Works Western Byron, Co.	Minc., I Cooming Co.	nc. o. opani	co., es,	in				106 115 150 140 40 149 30 39 49 147 146 130 145 124 110 48 18 122 2
St. Regis Sales Corp. Scott, Walter, & Co., I Screen Process Printing Seal-O-Matic Machine Seneca Wire and Mfg. Shinn, Cobb . Siebold, J. H. & G. B. Simonds Saw and Steel Sleight Metallic Ink Cd. Southworth Machine Spero, J., & Co. Standard Tag Co. Stander, Walter Y. Stout, Samuel C., Co. Strathmore Paper Co. Strathmore Paper Co. Taylor Machine Co. Teletypsetter Corp. Thomson-National Pret Ti Pi . Type and Press of Illin U. S. Radium Corp. Vandercook and Sons, Western Gear Works Western Gear Works	Inc. All Co	nc. o. pani	Co.	In .				106 115 150 140 40 149 149 30 39 49 147 146 130 145 1145 136 145 144 48 11 8

The Inland Prin

VOLUME 125

AUGUST, 1950

NUMBER 5

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Leading Articles for You This Month

PAGE

Manufacturers Look Ahead at What Future Holds for Next Ten Dramatic Moments in the Romance of Engraving... By Louis Flader 63

Dramatic Moments in the Romance

of Ink......By Charles R. Conquergood Dramatic Moments in the Romance of Paper By Harrison Elliott

Dramatic Moments in the Romance

Pacific Society of Printing House Craftsmen Holds Its Twenty-

Album of Presidents of Craftsmen's Clubs

Build Your Sales by Blotter!

-all that plus these regular features

Proofroom Pressroom 93 Salesmen's Corner 90

Specimen Review......81

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THE INLAND PRINTER, AUGUST, 1950, Volume 125, Number 5, Published monthly by the Maclean-Hunter Publishing Corporation, 309 West Jackson Boulevard, Chicago 6, Illinois. Horace T. Hunter, President; Ernest R. Gauley, Vice-President; J. L. Frazier, Secretary, (Eastern Office: 522 Fifth Arenue, New York City.) Subscription rates for United States: one year, \$4; two years, \$7; three years, \$10; single copy, 40 cents. Canadian: \$4:50 a year, single copy, 45 cents, Pan-American: one year, \$6; two years, \$10; three years, \$20. Make checks or money orders (for foreign) payable to Maclean-Hunter Publishing Corporation. Foreign postage stamps not acceptable. Entered as Second-class matter, June 25, 1885, at the Fost Office at Chicago, Illinois, under Act March S, 1879. All manuscripts should be accompanied by adequate postage for their return. THE INLAND PRINTER assumes no responsibility for unsolicited contributions except to accord them courteous attention and ordinary care.

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5

PAGE

79

83

92

.. 95 .. 90

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